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FIFTY-FOURTH ANNUAL CONVENTION, AMERICAN INSTITUTE of ARCHITECTS, WASHINGTON, D. C., MAY 11, 12 and 13

VETERAN delegates to conventions of the American Institute of Architects are quite positive that there never was, and some express the hope that there never will be, a convention just like the present one. To those whose interest in conventions is centered on the social features, this convention, they declare, has not been a success. First, and to many decidedly the most depressing feature, was the "No smoking" rule, rigidly enforced. In no part of the National Museum building is smoking allowed. One may not slip out of the convention room for a quiet smoke. One must leave the building. The thin blue haze of smoke that floated over previous conventions, which while clouding the air seemed to clear the brains of delegates, was not present here. Then, the amphitheatre was too large, too roomy for the convention's size. There was a tendency to sit in detached groups. This did not promote intimacy. Further, the amphitheatre was naturally planned to give the best acoustic results when the speaker stood on the platform. Delegates speaking from their seats could not be clearly heard, and it was found necessary to ask those who spoke at length to speak from the platform. These things all had a tendency to retard the easy progress of the meeting.

A great many new faces were to be seen, and many were of the younger men of the profession. The older and better known men were not here in force. This had a tendency to promote detachment and a lack of that professional intercourse that forms so large and pleasant a part of convention hours apart from the sessions. One member made the good suggestion that there should be a social intercourse committee at conventions, whose duty it would be to frequent the hotel headquarters and see to it that men got acquainted with one another.

And the weather. A steady downpour for two days. Delegates who were visiting Washington for the first time and had planned some sightseeing trips were shut in by the rain which at times was torrential.

But the man who did not smoke, the man who came to Washington for the convention alone, and the men who are trying constructively to promote the high ideals of the profession and were willing to submit to personal discomfort to accomplish them, did not adversely critcise everything. While it would not be true to claim that the present meeting was the most successful of any held, it is quite sure that it accomplished a very large measure of good result. It was purely a convention, as it should have been. The academic elements were missing, but in their places there was good hard-headed common sense, and a desire to turn the practice of architecture into those paths along which it has so successfully traveled in the past.

It was a dignified, hard working convention. It labored at all times for the best interests of the profession, and it cast aside impossible theoretical ideals, substituting the practical and constructive elements. And what more could be asked?

PRESIDENT KENDALL called the convention to order at ten o'clock. His address was received with much approval. It will be found in full on another page in this issue.

Reports of the various standing and special committees were presented. These will also be found, summarized in this issue.

A pleasing feature of the morning session and one that brought out the finest expressions of professional relations, was the presentation of charters to newly organized chapters. These were Arkansas, Florida, Kansas, Montana and Utah.

The interesting features of the afternoon session were an address by Harvey W. Corbett on Planning High Buildings for Narrow Streets, illustrated by a carefully prepared series of lantern slides, and a paper by Mr. John I. Bright on The Fundamentals of Town Planning. The open discussion following these features were valuable in the greatest degree. This meeting was very much worth while

In the evening there was a Conference on Education, presided over by Mr. C. C. Zantzinger. The details of this important meeting are too many to find space in this brief account. No subject discussed during the convention was of larger importance than this on education. The committee has exhaustively considered the subject of education as

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XUM

relating to the study of architecture, and it seems important that the research made should be carried to some actual accomplishment. It should not share the fate of previous well prepared reports. It is vital to the future of the profession of architecture that special effort be made along the lines of the excellent suggestions made in this document.

The president anounced that the Fine-Arts medal of the Institute had been awarded to Paul Manship.

ROUTINE business absorbed the morning hours of the second day's meeting. A feature of the afternoon session was the "Parallel Sessions." While the convention remained in session until its scheduled time of closing, there was an adjournment at 3.15, to permit those who desired, to withdraw to attend the presentation in the lecture room near the auditorium of specially prepared papers. These papers, illustrated by lantern slides, were The Minor Architecture of France, by George S. Howe, and Recent American Collegiate Architecture by Charles Z. Klauder.

While a certain group of members was attending the lectures in the nearby lecture room, the work of the convention in the auditorium was proceeding in order. During this session, Mr. Robert D. Kohn presented the report on the Congress of the Building and Construction Industries, and Mr. Ernest J. Russell presented the report on the National Board for Jurisdictional Awards. Following this there was a spirited discussion on the economic problems of the building industry. A well prepared paper was presented by Charles H. Hammond of Chicago.

The evening session was crowded with many important events. In addition to the interesting ceremonies incident to the opening of the national exhibition of architecture, the Honorable Herbert Hoover, Secretary of Commerce, made a long and very full address, outlining the proposed policy on the part of the Government in the reconstruction of the building industry. A summary of Mr. Hoover's address will be found in this issue.

THE morning session of Friday, the last day of the convention, was, as is usual at Institute conventions, devoted to the conclusion of unfinished business, the report of the tellers of the election for officers, and a very spirited discussion on the report of the committee on state societies. The action of the convention in this matter is so important, and the results so far-reaching, that it is proposed to present in a later issue a very full summary.

The convention closed with an informal dinner at the Chevy Chase Club, and was a brilliant gathering of delegates to the convention, many of whom were accompanied by ladies.

National Architectural Exhibition

IN view of the "lean years" that have marked the practice of architecture during the past, it is remarkable that the Institute should have been able to gather so large and very dignified an exhibition as was hung on the walls in the National Museum. At all times throughout the convention, this fine showing of work by members of the Institute was thronged by studious observers. The committee in charge had worked most successfully, and the various chapters given splendid co-operation.

It was unfortunate that convention days were rainy days, for there can be no doubt that if the weather had been pleasant, there would have been a large attendance.

Probably there never has been shown in Washington a larger collection of architectural work and possibly there has never been opened to exhibition in any city a more dignified representation of our architectural development. The first exhibition, held in the Corcoran Galleries last year, while hastily assembled, was a good one, but the present showing, more leisurely undertaken, is far and away better. These exhibitions are very much to be encouraged. Their educational value is unlimited, and they afford a social center for delightful gatherings during the convention.

XUM

THE PRESIDENT'S ADDRESS

Fifty-Fourth Annual Convention of the American Institute of Architects

IN addressing you this morning I desire to allude, very briefly, to some of the ideals we hold and to some of the opportunities which it seems to me are open to us as architects in the immediate future.

The report of the board of directors will recite to you the work of the past year and reveal something of what is planned for the year to come. With all that there is of achievement in this record, I am sure you will be pleased. Where we have failed to accomplish, I beg you to be lenient and condone our shortcomings, for you will know that we have meant well.

I cannot, however, refrain from a few words of personal acknowledgment. It has meant much to me to have the cordial sympathy and support of the board of directors and its ready response to all calls for service has only been equaled by the response which has come from committees and chapters whenever a call came to them.

Individuals have undertaken strenuous tasks and carried them to completion. Committees have responded to the duties imposed upon them. Some, to whom we felt we had given the joy of leading forlorn hopes, have led on to victory and achievement beyond our hopes.

For all these things and for the steady and continued friendliness and confidence you have given me, I return you thanks and cherish a grateful memory.

I have been privileged to visit many of you in your home cities and to know your chapters, yourselves, and your work at first hand and face to face. To me it has been a great stimulus and inspiration and I believe every year the president may profitably carry out a plan of personal visitation.

I record with pride and appreciation that the topics we discussed and the things that interested you were the dignity and worth of our profession and the opportunities for public service which are offering themselves to us in this present time.

I saw architects spending their money and their time, using their abilities to the utmost, that the man with little money may have a well planned, thoroughly built home within his means.

I have seen competitive designs by hundreds sent in for nominal or no compensation, to the same ends.

Men of eminent ability have gone into public service in their cities and towns, have assumed professorships in our colleges that meant living upon a tithe of what their skill, exercised in architectural practice, would have earned for them.

Our boards have been officered by architects who gave not only their splendid abilities, but their time and paid their own expenses, amounting to many hundred dollars, for what?—for their own gain or reputation? No, but in order that a great service to the working man, to the employees, or to the public might be done—and done well—and fair play and good faith between men and men might prevail.

In one Western city some of the architects are seeking hiding places and planning ruses, lest an appreciative public force them into the mayor's offices.

These conditions I find, in greater or less measure, from Atlantic to Pacific and it is, I believe, a sign of an appreciation which, although tardy and long delayed, is coming, and which we, as trained and efficient men, may receive, if we will but show ourselves worthy and willing to make the necessary sacrifices.

These things, however, are not to be attained simply by the practice of architecture. There must be joined thereto a sense of our responsibility to our communities and to the people among whom we live. To some of us it will mean the nation, to others our state, to many only our city or our town. According to our ability and our opportunity will the requirement be and the responsibility.

WE are facing a future for the profession, whose opportunities are almost unlimited. The country faces a need for buildings, unprecedented in amount. Housing and business make demands such as we have never known before and will not see again, unless, which God prevent, another World War shall again paralyze all beneficial enterprise.

Grateful communities all over the land desire to honor their dead and commemorate the service of those who dared all and returned. All that art can command, that skill can combine, that good design and inspiration can produce, is demanded for these symbols of gratitude. Who shall produce them if we do not?

I know of a combination of stone cutters, such as years ago would have been ready to furnish volunteers, carved at parade rest, full life size, in unlimited numbers, which in these days turns to the Institute and organizes a well conducted, properly paid competition (if any competition can be called well paid) in order to set up in their city a dignified and artistic monument to the soldiers of that place.

Commissions charged with erecting great memorials, costing millions, write to ask the Institute to advise them how to select suitably qualified men to design and supervise their buildings.

Who, today, plans to produce a home, a worthy business building, a public building of almost any grade, without the advice and assistance of an archi-

XUM

tect. We can hardly realize that a different state of affairs once prevailed, when, to quote one of the elders of our profession, Mr. George C. Mason, who has written most interestingly of the early days of the profession in this country, "the prospective employer applied to a builder for advice as to who was the best architect for him to employ," or ignoring the architect altogether, commissioned the builder to proceed without an architect.

When the fire (will Californians please note my accuracy) devastated San Francisco, the Governor of the State wired the Mayor of Philadelphia, "How many architects can Philadelphia furnish us and how soon can they leave for San Francisco?" From what I saw there, I question if such an appeal would now be thought necessary.

WE have heard much in late days of the encroachments of the engineer upon the fields of the architect, and we also hear much of the strangling effect of efficiency upon true art. I recently saw efficiency represented in a pageant as seated upon the shoulders of architecture with a stranglehold like an old man of the sea; the whole staggering upon limbs scarcely able to bear the load.

I am, personally, perhaps, more inclined to the practical than to the artistic; but I have all my life cherished an ardent admiration for the men who can see visions and dream dreams; whose finds conceive beauty and whose nerves tingle at discords; to whose feelings proportion and symmetry are essential. To them I pay all homage. Without their vision and courage, our art would be tame and commonplace indeed; but today we are learning that inspiration alone is not enough to insure a satisfactory result. The conception must have foundations; its airy pinnacles must be firmly fixed to the main mass; its vaulted halls and panelled walls must be conveniently and economically arranged. Our friends, the engineers, have given the bulk of their study to practical affairs, to convenience and utility, to accurate calculations of cost and construction. Sometimes, alas! we have ignored these items in our study of domes and spires. When we do we must expect the engineer to win against us; for the business man prefers a homely thing, which he can use, to a beautiful one, which cannot serve its purpose.

If we do our duty and avail ourselves of our opportunities, I do not fear the competition of the engineer, or of any other man; contractor or promoter, and I do not think you need do so.

You will perhaps say, "What has this to do with the ideals and brilliant possibilities you spoke of a few minutes ago?" This: (and I here wish to acknowledge my indebtedness to Mr. George C. Mason's record of early American architects as a professional body). The Association of American Architects had its beginnings in a gathering of a few architects, under the title of the "American Institute of Architects," which held its first convention in Philadelphia, in 1837, the year in which, it may be remembered, the Institute of British Architects was founded.

The Institution numbered some twenty-five practicing architects only. It was difficult for so few men, scattered all over the country, to maintain an efficient organization and the Institution was dormant for nearly twenty years, coming to life in 1857.

It reorganized as the American Institute of Architects and was chartered in New York. Many of the founders became eminent in the history of the profession. From that day to this, the objects of the Institute have been as stated in the charter.

"To organize and unite in fellowship the architects of the United States of America and to combine their efforts so as to promote the artistic, scientific, and practical efficiency of the profession."

Our friend Efficiency was alive even then you see.

Has it done so? I maintain that it has. The ethical standards of the profession, I almost said "moral," have been steadily held before us, almost too steadily we have sometimes thought, until today, whether we practice them or not, and I believe we almost always do, we know the right thing and generally we do it and I am certain that if we do occasionally err, the feeling of shame takes the satisfaction out of any profit we may gain.

The Institute has steadily held that the good of the whole was far greater than the gain of any one individual and has consistently urged that we relate our actions to that high principle.

Its interest in the men of the future has never wavered. Its earliest officers were men of vision and they opened their offices for the training of students, when there was no other door open to the would-be architect than that through this experience in the office of a qualified chief.

In such an office was trained Wm. R. Ware, the founder of the first Architectural School in America at Technology, in Boston, and later that at Columbia. Since his day many of his students have been teachers and organizers in other schools of architecture. These men and their successors have been active and honored members of the Institute and we today join hands with them in their work of training the architects of the future. We discuss with them their courses of study, and they even allow us, occasionally, to speak to their students. Our co-operation is hearty and appreciative.

Our interest is vital and efficient in our chapters and in our individual membership. Our men of high scholastic training have organized ateliers, taught classes, given free service, advice, and criticism, to students and draftsmen, and aided in developing a trained, artistic and efficient body of draftsmen, embryo architects, many of whom are today practicing their profession with honor and success.

In this connection I again avail myself of Mr. Mason's research and quote from Horman. Who he is I know not, but from his spelling he must be a

contemporary of Chaucer. "He is not worthy to be called mayster of his craft that is not cunynge in drawings and picturynge."

WE have, by showing our good work, by upholding high standards of design, by the examples presented to the public of worthy art, and by timely criticism of poor work, raised the public appreciation of good things and quickened the ability to detect and reject the bad.

We claim a large part in this; not all is due to the Institute. All honor to the worthy men who by themselves or in other groups have striven for high ideals, have worked to elevate public taste, and correct immoral conditions. We envy them, we desire their fellowship and their help in our own problems and to help them in theirs. We therefore again, as in the past, extend to them an invitation to membership in the Institute and to the fellowship which such membership will bring.

We believe that in the future such association will strengthen every man's hand for his task and that many who practically live up to the standards of the Institute, would help our work and strengthen their own standing, if they joined our ranks.

Believing this, an active campaign has been carried on this year, under the direction of a National Chairman, Mr. A. P. Clark, assisted by our efficient Octagon staff, and handled as to its local work by splendid committees from the chapters, to increase our membership and extend our influence. Nearly seven hundred names have been added, an addition of more than 33 per cent. to our membership.

We welcome these new members, we are proud and gratified to have them with us, and we hope for a still further increase in the future. With from ten to fifteen thousand persons claiming to be architects in the country, we must have a larger membership if we are to be a truly representative body.

It is fitting that I acknowledge here the splendid service of our membership committees in the several chapters and the efficient prosecution of the work by the Executive Secretary.

But what of these new men? Their good impressions of us wane and fade if we rest content with having placed their names on our roll of membership. So strong a body of men should command recognition and I hope that chapters will be at pains to recognize their ability and qualifications, to give them place and privilege as opportunity may offer, and to imbue them thoroughly with loyalty and affection for the chapter and the Institute.

We shall hope early to become acquainted and to recognize in our national committees the added strength which has come to the Institute. A degree of rotation in our committee appointees seems desirable, in order to use new men, and will be considered in new appointments.

May I here lay emphasis upon the vital fact that the chapters are the Institute; that *there* is exhibited the Institute spirit, that *there* most of us become acquainted with the ideals and realities of what a member of the Institute is and that as we act and are, so will the conception, true, or false, be formed.

Let us not hear again the query, "Why can a member older than I, more prominent in the Institute, do with impunity, things which mean discipline if done by me?" It ought not to be possible for such a statement to be made.

Gentlemen, I started to set before you high ideals. I begin to realize how futile is such an endeavor. You already have them. You are doubtless living up to them more perfectly than I. I can only say, inadequately and imperfectly, I believe in them, I try to practice them, I pray you go and do likewise.

XUM

THE COMMITTEE REPORTS

A Summary of the Reports of Certain Committees, As Presented to the Fifty-Fourth Annual Convention of the American Institute of Architects

Fire Prevention

The Committee on Fire Prevention urges upon architects to interest themselves generally in the securing of needed amendments to existing building codes. Further, the report states:

We believe that now is the proper time to revise building codes generally, and remove from them all unnecessary restrictive requirements. For example, the building codes of most large cities at present do not permit of the use of the newly developed hollow brick wall, the scientific use of hollow tile, the proper use of the concrete building block and other types of construction which have been recently developed and which, if permitted, will result in quite materially reducing the cost of construction of the so urgently needed housing.

Your Committee wishes to announce that the report of "Fire Tests of Building Columns" made by The Associated Factory Mutual Fire Insurance Companies, The National Board of Fire Underwriters and the Bureau of Standards, Department of Commerce, jointly conducted at the Underwriters' Laboratories, Chicago, has now been published and issued. Every architect should secure a copy of this report. The report is conclusive as to the fire-resisting qualities of the different types of fireproofing, etc.

Building

The Committee reported that the Octagon, the headquarters of the Institute in Washington, is in good condition structurally, but that there are various things which could with advantage be done if funds were provided.

Public Works

Due to lack of interest in Congress to bring about the reorganization of the Executive Department of the Government, this Committee reports its activities have been limited during the past year.

The report states:

As individual citizens, and as an organization realizing the present inefficient operation of the Executive Departments, we should now, more than ever, employ every influence to bring about their reorganization, exerting our greatest effort on the Department of Public Works, because of our intimate knowledge of its requirements.

To this end your Committee offers the following Resolution:

> Resolved, that the American Institute of Architects, in convention assembled, realizes the imperative need of early reorganization of the Executive Departments of our Government, and endorses any reorganization looking to more economic and efficient administration.
>
> That this organization is particularly impressed with the creation of a Department of Public Works, and offers its best efforts to any Committee of Congress whose duty it may be to recommend the proper functioning of such a department.

Foreign Building Co-operation

The report states in part, as follows:

The work of the Committee on Foreign Building Co-operation during the past year has been confined to the gathering together and shipping to France for exhibition of a collection of drawings and photographs of American Architecture.

The exhibition held last year in the Corcoran Art Gallery roused the enthusiasm of two visiting French architects, with the result that an offer was made by the President of the Société des Artistes Français, colloquially known as the "Old Salon" to set aside a section in this year's exhibition, if the Institute would gather together the material. The invitation was accepted by the Board of Directors and the work of arranging for the exhibition and selecting the drawings and photographs was turned over to this Committee.

The Committee serving as a jury, held four formal sessions to examine the work submitted and the drawings selected came from a total of 477 submitted. As there were no Institute funds avaliable for the expenses of the exhibition, it became necessary to assess the exhibitors on the amount of space covered by their exhibits.

The Committee was fortunate, in that its Secretary, Mr. Julian C. Levi, has found it possible to accompany the drawings to France and to supervise the hangings of the Exhibit and the preparation of the catalog.

The Salon Exhibition closes about July 1st, and it is hoped to get the exhibits back within two or three months at most.

It has been suggested that this work be exhibited on its return to America in the Fall.

War Memorials

The Committee on War Memorials submits the following report:

Acting within the scope of the instructions of the Board of Directors, as well as within the resources at the command of your Committee, it has throughout the past year rendered such advisory service to promoters of memorial projects as occasion offered. In the majority of instances the inquiries that have come to your Committee have included requests for designs or illustrations suggesting typical solutions of memorial problems and in response your Committee has forwarded the literature issued by other organizations as directed by the Board of Directors in the absence of similar publications on the part of the Institute.

The conditions which have held in abeyance many building operations have in like manner prevented the development and realization of memorial projects besides which your Committee has had occasion to note an abatement of popular interest on the subject. This apparent recession of the wave of enthusiasm that followed the armistice and the unfavorable building conditions have had the advantage at least of diminishing the number of hastily considered memorial structures and at the same time have extended the opportunity for more careful study of the many memorials that are still under serious consideration.

Small Houses

The report of this Committee covers sixteen pages of type matter and illustration. It treats in the most thorough manner the subject of the designing and planning of the low cost house, and offers for approval by the Institute a proposed Certificate of Incorporation for Architects' Small House Service Bureaus. The working of the Minnesota Bureau is set forth in detail. This report is a valuable document and its discussion during the convention one of the most important features. Architects

everywhere in this country should interest themselves in this important movement, and familiarize themselves with this valuable report.

Registration Laws

The report of this Committee takes up and discusses the matter of registration laws in the United States. It states:

We would particularly urge that all states scan their laws with care and that when conditions are favorable, amendments be secured which will eliminate undesirable features, particularly those highly detailed provisions which create difficulties as between one state and others. Indeed reasonable agreement is desirable between all the states having registration laws if architects are to conduct interstate practice.

Your Committee is of the opinion that the form of reconmmended uniform law for registration of Architects, Engineers and Land Surveyors as revised by the Joint Committee of representatives of the American Institute of Architects and Engineering Council is a valuable document and an earnest and painstaking effort at co-operation of the professions, but that the Institute should reaffirm its opposition to the passage of such joint laws.

The Committee is thoroughly convinced that Engineers and Architects should co-operate to the utmost with respect to legislation, but that the legislation for the two professions should be distinct.

State Societies

This report discusses at some length the result of a survey on the part of the Committee on the Status of State Societies. The report concludes:

Suggestions have been many and varied and have ranged from "paternalism" on the part of the Institute toward State Societies, to full recognition of State Societies as affiliated members of the Institute, with a delegate voting power on the floor of the Convention, in a much smaller ratio to their membership than that accorded to Chapters. The carrying out of this latter suggestion would require that the Constitution and By-Laws of the Institute be amended and would create an anomalous situation that would be pregnant of confusion and misunderstanding, and in the last analysis be seriously detrimental to the independent growth and action of both organizations. The relationship of the State Society toward the Institute would, it seems to your Committee, be less dignified were they to be given only partial representation, than it would be were they recognized as independent organizations and offered full opportunity for co-operation on an even footing.

Because of the varying conditions surrounding the practice of architecture in different parts of the country and the lack of uniformity in the organization and administration of various State Societies, it seems inexpedient at this time to commit the Institute to any countrywide policy, but rather to set a point of contact between the Institute and the State Societies that will be flexible and possible of easy expansion.

Your committee, therefore, makes the following recommendations:

(*a*) That as a general policy State Societies shall be invited to send delegates to the Convention of the Institute. These delegates to have the right of the floor on all subjects except those affecting Institute policy, but not to have the right to vote.

(*b*) That the Institute shall create a Standing Conference Board on State Societies, charged with the following duties:

1. To keep informed as to the officers and membership of State Societies.
2. To request parliamentary action by State Societies on questions of importance (not of Institute policy) submitted to the Chapters, and to receive and file with the Secretary the result of such action.
3. To meet with delegates from State Societies either at the convention or at specially arranged conferences at which delegates shall have full parliamentary privilege, and to report to the Convention for action any resolutions, recommendations, or motions adopted at such meetings.
4. To receive communications from State Societies where they may wish to secure co-operative action by the Institute, and to present recommendations to the Board or Executive Committee of the Institute for action, or reference to Chapters.
5. To solicit the support of State Societies where they can be helpful to the Institute.
6. To assist newly formed societies in the preparation of their Constitution and By-Laws.
7. To assist Societies in their efforts to secure the passage of Registration Laws.

This Country's Oldest House

THE oldest house in the United States is now standing at St. Augustine, Fla. Not only is this venerable piece of architecture of sufficient age to attract lovers of antiquity and students of history, but it is of sufficient mysticism to allure the less serious minded for it romantically offers the visitor of today the use of its wishing well and its magic bell.

An interesting account in the New York *Post* was prepared by Frances Arnold and ran in part as follows:

When Pedro Menendez came to the New World in 1566 to found a settlement in the Ponce de Leon famed Land of Flowers, he brought with him from Spain more than two thousand people, among whom were twenty-seven monks.

This house was built for the monks and was their worshipping place and living quarters for twenty-five years. Their sleeping spaces were cells in the rooms on the second floor, the ceilings of which—and the visitor is told they are the original—are inlaid with little blocks of wood, so cut and arranged as to form a coffin-shaped design. It is said the good monks slept nightly in coffins, so as to keep thoughts of death always before them. Death alone, they reasoned, is free from sin.

Victoriously it has withstood 350 years of exposure to the weather, seven English attacks, conducted by the best known methods of their time, and five Indian massacres. Moreover, to its credit, it is recorded that when that bold explorer Sir Francis Drake attacked the city of St. Augustine in 1572 this little old house, then quite new, was the only building not destroyed. It was the only one built of coquina.

About two years ago the oldest house was purchased by the Historical Society of St. Augustine and every room is now filled with a collection of curiosities and historical antiques, gathered not only from America and the familiar haunts of travel-worn Europe, but also from out of the way secluded corners of Asia and Africa.

It stands today a silent witness to a country's history and a fascinating connecting link between the present and the past.

XUM

NATIONAL COUNCIL of ARCHITECTURAL REGISTRATION BOARDS

THE National Council of Architectural Registration Boards met on the evening of May 10 and the morning of May 14 in the National Museum at Washington. The Council was formally organized at a special meeting held in St. Louis last November, since which time the details of organization and operation have been worked out and given effect. Detailed reports were read on the work of the Council showing that it is functioning as a clearing house for registration boards; on the part of architects desiring to do interstate practice that it is collecting information greatly facilitating the work of the various registration boards with respect to reciprocity. In order to make possible reciprocity, it is also studying the standards of examination, with a view to leaving the various boards considerable freedom in their interpretation. Messrs. Sylvain Schnaittacher of the California Board and Arthur Peabody of the Wisconsin Board read papers on examinations. Mr. Richard E. Schmidt, Chairman of the Committee on Registration Laws of the Institute, discussed registration laws which are either under consideration or which have been re-recently given effect.

The organization reaffirmed the vote taken by it at the St. Louis meeting against joint laws for architects and engineers, while recommending the fullest possible co-operation between engineers and architects in the securing of mutually acceptable laws.

In addition to registration boards, a number of Institute chapters and state architectural associations have joined the Council as associate members. More such members are needed to enable the Council to do its work effectively and to cover its cost of operation, its services being rendered at cost. The office of the Council is at 3230 West Monroe Street, Chicago, Ill. Full information will gladly be furnished by Emery Stanford Hall, secretary-treasurer, who has given an extraordinary amount of energy to the work of the Council.

One meeting of the Executive Board was held in Chicago in March. The convention gave hearty approval to the work of its officers. The executive board was extended by the addition of two vice-presidents—Messrs. Sylvain Schnaittacher, of the California registration board, and W. H. Lord, of the North Carolina board.

The following officers were re-elected: President, Emil Lorch, Ann Arbor, Mich.; vice-president, Arthur Peabody, Madison, Wis.; secretary-treasurer, Emery Stanford Hall, Chicago, Ill.

NOTES of the CONVENTION

The ballot for the election of officers and directors for the coming year resulted as follows:

For president, Henry H. Kendall; first vice-president, William B. Faville; second vice-president, Robert D. Kohn; secretary, William Stanley Parker; treasurer, D. Everett Waid. The directors were L. P. Wheat, Jr., of Washington, D. C., Chas. A. Favrot of New Orleans, and George E. Bergstrom of Los Angeles, Cal.

The report of the committee on credentials stated that there were 223 regularly accredited delegates, 14 ex-officio, 13 proxies, 31 non-delegate Institute members and 2 ex-presidents, Messrs. Irving K. Pond and Thomas C. Kimball, a total of 283 members present.

The present membership of the Institute as set forth in a report of the Board of Directors, as on May 9, 1921, was 2,256, being a gain since the last report of 726 members, or a net gain in active membership of 683.

A feature that was availed of by the visiting delegates and guests of the convention was the magnificent exhibition of American art, hung on the walls of the National Museum galleries on the floor above the auditorium. This splendid collection of paintings, the gift of numerous generous donors, forms the nucleus of what will undoubtedly some day be the finest collection to be found in this country, and one that will give a very great stimulus to the advancement of the painter's art in America.

Many members were quick to approve the suggestion that there should be a special committee of the Institute appointed in order to promote a more intimate association between visiting delegates during convention days.

The details of the business conduct of the convention, the reception of guests and the attention to the needs of the visiting members were admirably worked out by Mr. Kemper, executive secretary, who is to be highly commended for many successful features of the convention.

URBAN CONGESTION—A STUDY of ITS CAUSES and SUGGESTIONS For ITS ERADICATION

By JOHN IRWIN BRIGHT

An Address Delivered Before the Fifty-fourth Annual Convention of the A. I. A.

THE following remarks deal with those special problems of congestion characteristic of a metropolitan center. Large cities differ fundamentally from small cities. The relations of New York to London or to San Francisco are somewhat different from the relations of small cities to each other. In the larger agglomeration there must be located what is loosely termed "big business"; there must be great banks, large commercial units serving the needs of international trade and concentration. It is a phenomenon that creates special problems of its own.

Preliminary to any study of urban congestion it is important to search for and define the clauses separating and qualifying them in order of their importance. While concentration of wealth is without doubt a major cause under our *laissez faire* yet congestion could be eliminated by some physical change in the plan without affecting present control of credit. Large scale industry requires that its facilities be concentrated; its factories, offices and banks must occupy a relatively restricted area, but it is entirely conceivable that the present economic system could exist under conditions where there would be no crowding. Although superficially modern business enterprise seems to create congestion it is to my mind a contributory but not a major cause.

The control of land value is of a deeper significance. Private control of site value insists upon a constant increase in price, obtainable only by increased intensity of use. Its uniform demand is more crowding. It is the one great economic cause of congestion.

It is the capitalization of location or site value that determines the price of land and the interest on this capitalization is rent. Rent rises and falls according to the demand. The land owner never furnishes in any minute degree any service for rent received. He has created no wealth, he has performed no work. He lives entirely by the labor of others. As population increases the use value of land rises and is capitalized by the land owner. The rent is raised. The money so paid out is a drag upon production and production can never hope to recoup itself for in the measure as it prospers the land owner is ready to absorb practically all of the increment. The money earned by productive effort becomes the unearned increment of the land owner.

That which is spent upon the land is in a different category. The cost of buildings is practically the same in any locality and the tenant pays to its owner a sum representing interest on capital invested and maintenance, repairs, depreciation and obsolescence. It is essentially the sale and purchase of a manufactured product. In the language of an economist it is a return on an investment as differentiated from rent.

Rent, properly speaking, is always based on the capacity to pay and aims at the absorption of the difference between the cost of production and the selling price. Ever increasing concentration is forced by it, and as long as private speculation in land exists our cities will be more and more hampered for sufficient space.

I am absolutely convinced that as architects and city planners we are powerless to carry out our ideals until the speculative control of land values, the main incentive to congestion, is rendered harmless to the community.

Together with this reform municipalities must have the power to determine the intensity of use of a given unit of ground. It is one of the principles of zoning. It is a provision solely for traffic convenience in order that street and rail facilities may be proportioned to the load they are to bear. It is quite hopeless to expect a street designed for a certain intensity of traffic to serve efficiently any future increases no matter how large they may be. A limit must be set upon the number of usable square feet of floor on any given area. The number of human beings using a given ground area must be kept within bounds if cities are to be made workable.

It is now in order to consider the street design and to inquire into the causes of congestion from an engineering point of view.

The diagram of a typical city shows one or more highly congested areas and a street system as a means for their maintenance and growth. When conditions become uncomfortable the almost universal practice is to construct by-passes as a means by which traffic may be diverted. This and the widening of streets are the generally accepted methods of dealing with the evil. But experience teaches with disconcerting uniformity that while for a time the conditions are bettered by these measures, yet no lasting improvement is effected. The technique is predicated upon the assumption that enough of the traffic flow will use the by-pass to relieve the central jam. But as the business necessary for the crowded area accounts for more

XUM

than enough traffic to create the condition it is desired to eliminate, the pressure remains unrelieved. From ten to fifteen per cent. of the entire number of vehicles might seek the perimeter and the remainder would not be affected. It is important to insist that traffic conditions in general are not benefited by a system of by-passes.

Street widening is largely ineffective because traffic is congested only to a minor degree by the inadequate width of the roadbed. The principal cause is the interruption of traffic streams at street intersections. It is a point which can be illustrated by a four-way plumbing connection to which are attached pipes of equal diameters. It would be quite useless to attempt to pump water through the system if pressure were applied at each of the four pipes simultaneously. To obtain any circulation two pipes must be cut off by valves, a check valve of the desired direction placed in the third pipe and then pressure applied at the end of the fourth pipe will force water freely through the central four-way connection. This illustrates traffic control at street intersections. The valves represent policemen and the water represents flow of traffic. It is evident that the situation would not be improved if one or more two-inch pipes be substituted for those of smaller dimensions. It would allow more water, or in the case of the streets, more vehicles to accumulate at the point of opposition, but the time lost by each vehicle by the arresting of movement would be substantially the same.

The design of street intersection in such a way as to avoid traffic interruption is the one way to cure congestion.

In order fully to illustrate the point, I have redesigned the central two square miles of Philadelphia, conceiving it as a purely commercial center in the metropolitan sense of the word. On such a basis there must be excluded all buildings devoted to residential or amusement purposes. These classes of structures, such as hotels, apartment houses and theatres, should be grouped around the main inter-city passenger transportation unit or units. There would be left only those buildings devoted in the main to large mercantile establishments, wholesale and retail, banks, offices and the larger public buildings. Having determined the character of occupation there is assumed as a necessary factor for the street design the maximum extent of usable floor space in each block to be served by the transportation facilities. As the floor space must be evenly distributed over the district, an arbitrary height of five stories has been adopted. It is an arrangement that in no way precludes a variety of facade nor does it even prevent the erection of very high towers provided that the volume of the building does not exceed a certain limit. Height has no bearing upon the problem of transportation, to which for the moment the field of inquiry is restricted.

The comparison between the old and the new plans is extremely interesting. The area studied is 1,228 acres, of which 28 acres are devoted to parks and 1,200 acres to buildings of all kinds and the street system. The street system is 385 acres, or almost one-third of the entire area. The usable floor space of all kinds is in excess of 975 acres. The new system would show that 795 acres are covered by buildings and streets, of which about 21.3 per cent. is devoted to streets, while the park area is increased to 434 acres, compared to 28 acres as at present. The total new floor space, planned with due regard to comfort and efficiency, is about 1,500 acres, more than one and one-half times the present figure. The park system has nothing to do with the transportation problem, and it is very possibly in excess of a reasonable requirement, but as represented on this plan it becomes the by-product of a well considered arrangement.

Having determined the volume of the buildings and the space they are to occupy the street system can next be studied.

The plan represents in principle an office building covering an entire square and having in the center an open court. There would be but one main traffic loop serving directly the buildings on its either side, again comparable to the corridor of an office building. The loop would serve the three main divisions of traffic, pedestrian, vehicular and rail, separated on super-imposed levels. Pedestrians using the upper tier would be able to walk from one part of the district to another without at any time being forced to descend to the vehicular level. Vehicular traffic would be on the next level and the street intersections would be so designed that at no time and at no place would traffic streams cross at right angles. The typical intersection would be designed on the familiar plan of a turning monument, while the more important intersections could have two vehicular levels in order to expedite movement. This latter detail obviates the necessity of constructing an enormously expensive by-pass to be used by but 10 per cent. of the entire volume of traffic.

Rail transportation would enter the district by the loop and would be accommodated in open cuts, not subway. Suburban trains would stop at the main passenger distribution center outside of the district only for the purpose of making connections with trains of the inter-city system.

The commuting passengers without descending at the main station would then be transported directly to their destination in any part of the district. The concentration caused by main passenger stations surrounded of necessity under the present system by hotels, department stores and so forth would be entirely obviated under this plan. The rapid transit system would occupy the same open cuts and the local service cars entering the district would also follow the same route. In Philadelphia 90 per cent.

XUM

of the entire business of the street railway company is conducted in the central area, and most of the fares are collected during one hour in the morning and three-quarters of an hour in the afternoon. The present street system affords no means by which these huge numbers of people can be properly accommodated. The design here advocated would permit of an elasticity of operation hitherto undreamed of. The traffic loop could be worked quite independently of the rest of the street railway system, while at any time and at any point it could be instantly united to the general system.

The principle of the transportation system as here laid down both for rail and vehicular traffic is the avoidance of the interruption of traffic systems. It is the next great step in the planning of our metropolitan areas. No mention is here made of the economics to be affected by the proper planning of buildings and streets, nor is there any attempt to compute the cost of the installation of such a system. The thought uppermost in my mind is to present the idea in diagrammatic form applicable in its broad lines to any city, and therefore any definite estimates of cost would be beside the point. It is impossible, however, to examine this scheme without realizing its bearing upon the conservation of human energy and life. Its capital cost would no doubt be great, but its enormously lessened cost of operation is a still more important factor to be considered.

As I see it, the main question is not one of finance, formidable as that may be. We are approaching a situation where a radical change in street planning is imperative. When the necessity is realized by a sufficient number of people the enterprise will be embarked upon and methods of financing it will be discovered. Our cities must solve the problems which they themselves created or our civilization cannot maintain itself.

A LEGACY TO POSTERITY

The manager of the Bush Company's proposed building at Kingsway would revive a quaint old custom, states *The Architects' and Builders' Journal* of London. He would bury in the foundations of his buildings a collection of objects that are characteristic of the time in which those foundations are made. He had been struck, it seems, by the difficulty Mr. Wells had encountered in writing ancient history—so few material survivals of three thousand years ago have come down to us. Now, the foundations of the Bush building, being constructed of reinforced concrete, will (unless they are deliberately destroyed) last three thousand years or more. Sympathizing with Mr. Wells's deprivation, and wishful of providing the historian of three thousand years hence with greater abundance of contemporary detail, the Bush manager thinks of embedding in the concrete foundations a casket containing objects typical of our times. What should they be? Happy thought—why not secure the cooperation (and incidentally the autograph, to say nothing of the potentialities of advertisement implied in a name of such renown) of Mr. H. G. Wells? The catalogue of common objects that Mr. Wells suggested in his very obliging reply is too long to quote here. It includes "samples of patent medicines and what they profess to cure," a "current book on 'How to Behave,' and town maps and plans." These things and the others to be inurned with them should be carefully described and explained, lest the vastly more civilized persons of three thousand years ahead should be perplexed as to whether, for instance, the book on "How to Behave" should be taken quite seriously; for surely such a book will reveal the primitive barbarians of 1921 as incredibly ridiculous creatures; while the "town maps and plans" will confirm the impression of twentieth-century ineptitude. All this, however, is based on the sanguine but utterly unsound assumption that these ghastly relics will not be disclosed until the lapse of three thousand years. Modern buildings have no such length of days, and the Bush building will have disappeared, foundations and all, leaving not a wreck behind, about two thousand nine hundred or more years before the time scheduled for the revelation of the relics. It will have disappeared not because of any sort of instability, but because love of change, fickleness of fashion and fancy, will ordain that some different building shall take its place. So the ingenuity of the manager and the genial compliance of Mr. H. G. Wells are entirely wasted? Not at all. Remote posterity may have no reason to bless them; but, in their own day and generation, what a splendid advertisement they get out of the manager's brilliant idea. Not that this was at all the intention: it has simply cropped up incidentally, and spontaneously, as so many happy unpremeditated effects are apt to do. Foundations—or, rather, foundation-stones—seem inseparable from advertisement. The mayor, the alderman, and the pious founder, often find in the inscription the sole means of going down to posterity. Even the architect has been known to have his name thus immortalized by accompanying the names of the civic magnates, usually cut in rather smaller letters on an obscure corner of the stone.

XUM

Doorway to Fairfax House, Alexandria, Va.

(See reproduction of original drawing by O. R. Eggers on opposite page)

AT the opening of the Revolutionary War, the "Virginia Fairfaxes" were the best known of the American Colonial pioneers of English birth. Thomas, sixth Baron Fairfax, had acquired an immense estate in Virginia, which comprised about one-quarter of the entire colony. Though ardent loyalist during the Revolution, the Fairfaxes were permitted to dwell in peace in their manor house near Winchester.

The sketch presented by Mr. Eggers in this issue shows the Fairfax house in Alexandria, Va. It is typical of the best work of this period, and undoubtedly was the product of one of those now unknown carpenter-architects who so efficiently built along our Eastern seaboard during the close of the eighteenth century. This house stands today but little changed from its original design, and the porch selected by Mr. Eggers as the subject of the present sketch is one of the many that have given inspiration to architects as among the best details of our Colonial period. These carpenter-architects unquestionably worked, as did our great modern painters, to achieve simplicity with fullness. It is the outstanding characteristic of all of our best early Colonial work, and the result is a purity of classic beauty that is unsurpassed.

DOORWAY TO FAIRFAX HOUSE, ALEXANDRIA, VA.
THE AMERICAN ARCHITECT Series of Early American Architecture

XUM

EDITORIAL

Editorial Announcement

THE publishers of THE AMERICAN ARCHITECT take pleasure in announcing that Ernest McCullough, C. E., Ph. D., is now associate editor.

Colonel McCullough is widely known in the professions of architecture and engineering through his many books and contributed articles to leading technical publications. He assumes his present connection after long and efficient service in the U. S. Army. He is now returned to civil life, retiring from the army with rank of Lt. Colonel, Chemical Warfare Service, U. S. R. C. It is believed that Colonel McCullough's wide experience and highly trained ability as an architect and engineer will create for THE AMERICAN ARCHITECT, and particularly its Department of Architectural Engineering, features that will be found of great importance.

For What Is a Public Library Maintained?

FOR what purpose is a public library built and maintained? In view of the many attitudes of officialdom in New York City towards our Public Library, it is reasonable to ask this question. The taxpayers of New York have acquired by purchase and generous donation many volumes, and erected a costly and dignified building, where this vast treasure might be safely housed and where it might be, with reasonable restriction, readily accessible.

The official ideas of the purpose to be served by a library are apparently much at variance with established custom. Studious people use a library for purposes of study and research. Quietness and order are essentials of a library's working spaces. Perhaps it was a mistake at the outset to place our Public Library on the principal thoroughfare and also on its very corner of most congested traffic. But, having made the error, if it was one, it does not seem necessary to have turned the approach of the Library into a reviewing stand or to have located all the many "drives" on its steps.

For days before some contemplated review the Library front is marred by unsightly structures of rough boarding, a lurking place for litter and rubbish. During the hours of parades, the Library is the point where the blare of bands and the shouts of an applauding public, make it impossible for frequenters of the Library to pursue their studies in that quiet which is undoubtedly necessary. While these things are, of course, no disrespect to the cause of learning, they show a lack of knowledge of essential characteristics of a library's environment.

SILENT, but equally disrespectful features of Library surroundings are the blatant signs which disfigure the corner of Forty-second Street and Fifth Avenue. Decency and public pride demand the removal of these nuisances, erected for private greed in direct violation of the public rights. Bad enough by day light, they are worse at night. The alternating and flickering lights cast dark shadows or bright flares into the rooms of the Library to the positive discomfort of those who use them. Is it possible that there is no legal redress for this sort of thing? The City has spent many millions in creating a beautiful civic center. Does the City have to submit while sordid individuals use this fine building as a background for the exploitation of their wares? It is bad enough to have this pest of sign boards on Riverside Drive, or along the pleasure roads bordering our rivers, but it is more than a disgrace to permit them in such close proximity to our Public Library.

A National Duty

THERE was universal surprise, and in many cases actual resentment shown, when the delegates to a Masonic convention held in Washington, visited Mount Vernon, and were each compelled to pay an admission fee of 25 cents.

Mount Vernon, the most sacred shrine of patriotism in this country, is not under the control of the Government, but is in private hands. A number of years ago, a number of patriotic women, alarmed at the possibility of Mount Vernon crumbling to decay, owing to its then neglected condition, acquired the property and zealously set about its restoration.

This result they have splendidly accomplished. The small fee of 25 cents, charged for admission, barely pays the expenses of upkeep.

Undoubtedly Mount Vernon should become the property of the nation. But, it should also be left in control of the woman's organization which now so efficiently guards it.

XUM

A LOUIS XV PANELED ROOM

THE Metropolitan Museum of Art, New York, through the further generosity of J. Pierpont Morgan, has recently acquired the woodwork of a room of the period of Louis XV. The paneling has been installed on the second floor of the Morgan Wing. In its original position the woodwork probably made the four walls of a room, but the exigencies of installation have necessitated a three-sided arrange- made the four walls of a room, but the exigencies of which is on exhibition close by. It is impossible to say just what the original arrangement was, but the presence of an alcove, about ten feet in width, would suggest that it was a bedroom. At the period, even among the lesser society, the latter was used largely for reception purposes, which would explain a treatment somewhat over-elaborate according to modern ideas, as may be seen by glancing at any of the numerous engravings of domestic interiors published during the eighteenth century.

The woodwork comes from a house in the Rue Thorigny, Paris, which is said once to have been in the possession of Madame de Pompadour. Thus it comes from the quarter of the Marais, occupied in general during the period by the lesser nobility and the richer bourgeoisie, or upper middle class, and it was probably for a family of the latter class that the room was made, somewhere between the years 1740 and 1750. We cannot, of course, judge such a room by the ultimate standard of the princely work at Versailles carried out by Verberckt and the brothers Rousseau, or even by the gorgeous decoration of the Hôtels de Rohan and Soubise in the same quarter. Too often, however, we are blinded by the superlative qualities of creations of this type, which are of course few in number, and fail to see and appreciate the quality of the work done to supply the needs of a slenderer purse and humbler taste. The new room is a good example of this latter type and shows to what a degree of excellence the better class of popular work had attained at this date, following in its own way the tradition and developing standard of the court.

The architects of the day furnished for the smaller

(*Continued on page* 595)

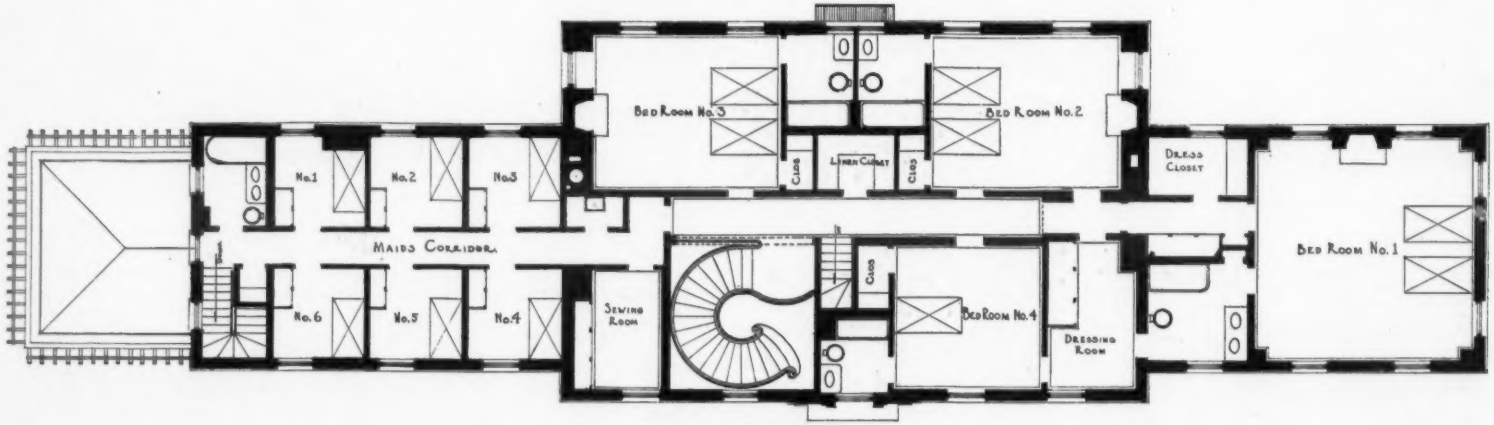
WOODWORK FROM A ROOM OF THE LOUIS XV PERIOD, FORMERLY IN A HOUSE IN THE RUE THORIGNY, PARIS, SAID ONCE TO HAVE BEEN IN THE POSSESSION OF MADAME DE POMPADOUR

Gift of J. Pierpont Morgan to Metropolitan Museum of Art

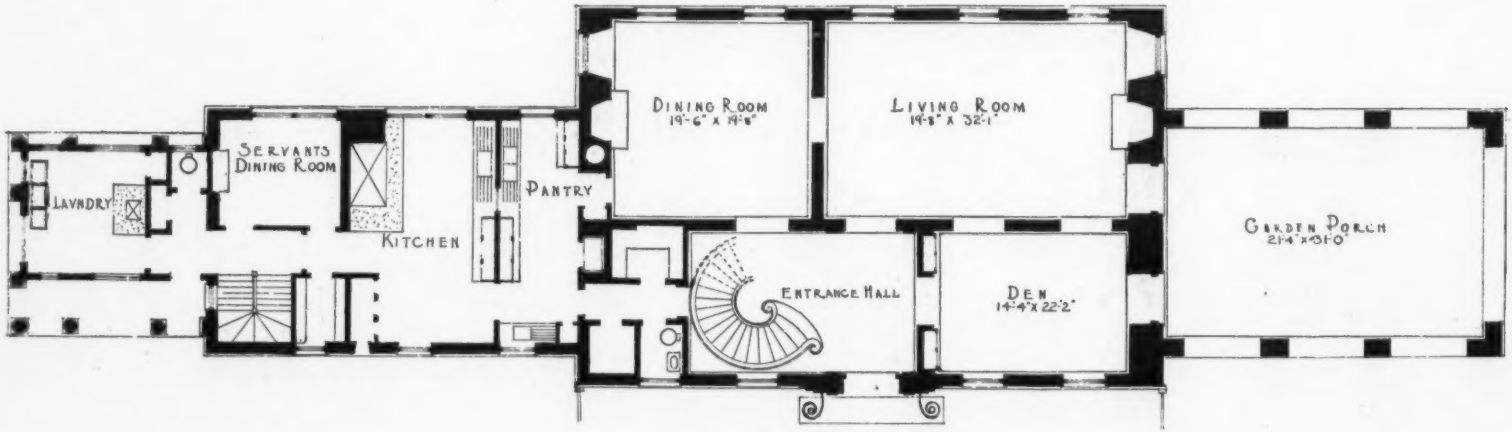
XUM

HOUSE OF MR. ANDREW V. STOUT, REDBANK, N. J.
JOHN RUSSELL POPE, *ARCHITECT*

LIBRARY
THE DETROIT EDISON CO.
JUN 7 1921



SECOND FLOOR PLAN

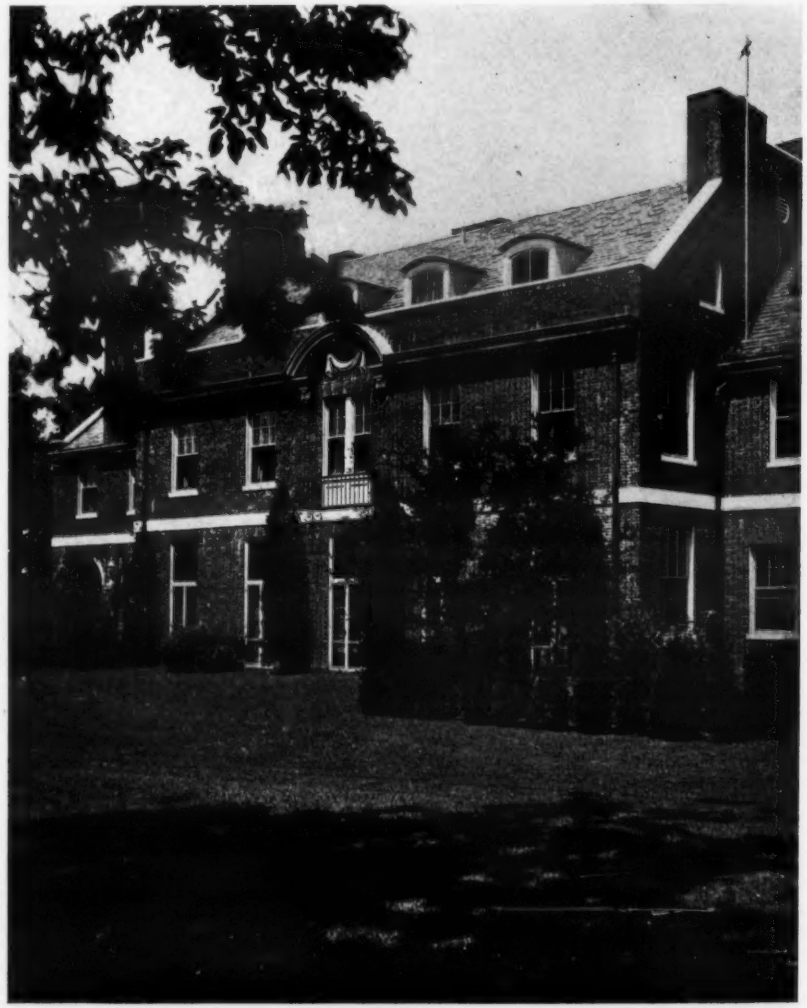


FIRST FLOOR PLAN

HOUSE OF MR. ANDREW V. STOUT, REDBANK, N. J.

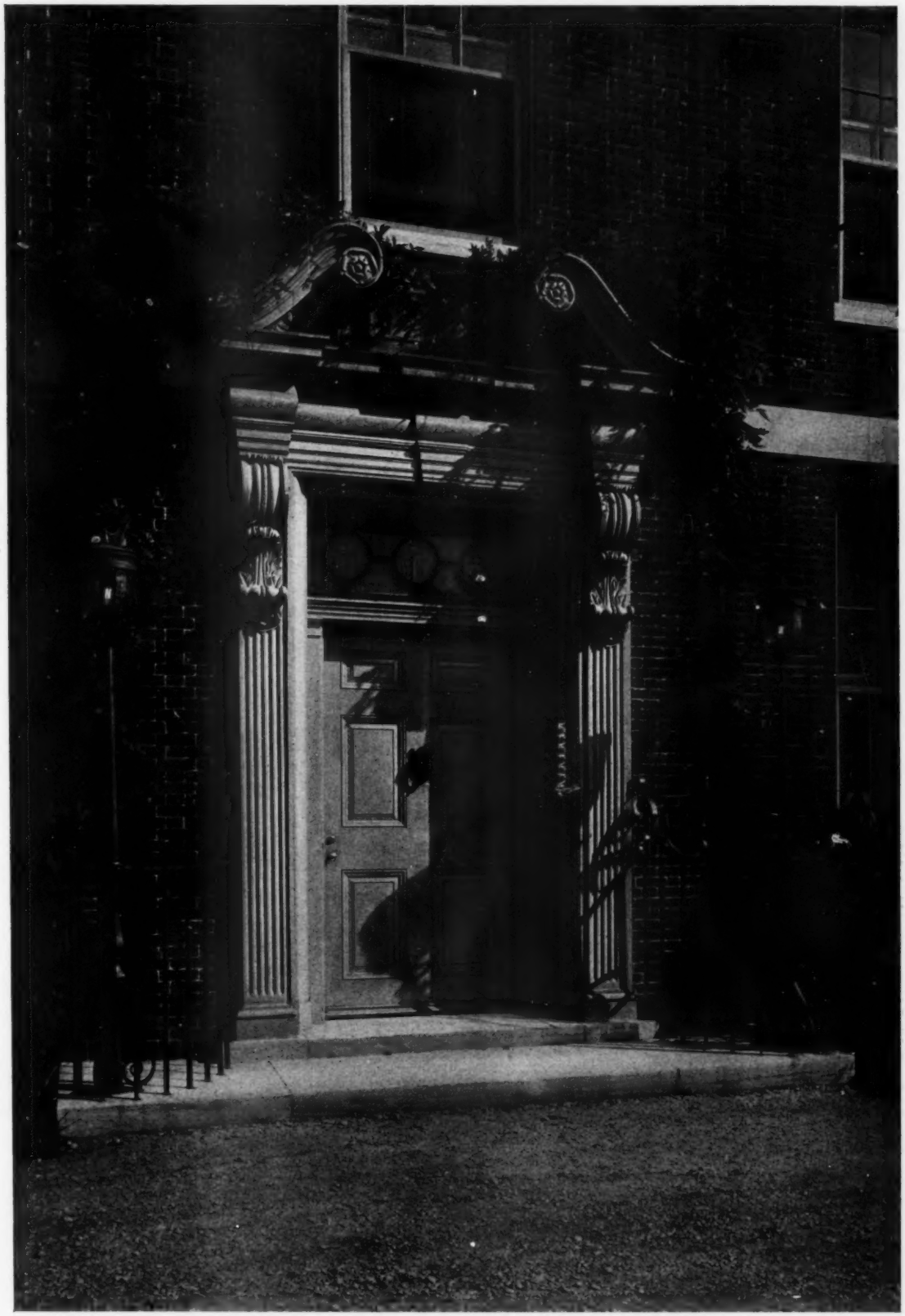
JOHN RUSSELL POPE, *ARCHITECT*

REAR VIEW



GARDEN FRONT

HOUSE OF MR. ANDREW V. STOUT, REDBANK, N. J.
JOHN RUSSELL POPE, *ARCHITECT*



ENTRANCE DOOR
HOUSE OF MR. ANDREW V. STOUT, REDBANK, N. J.
JOHN RUSSELL POPE, *ARCHITECT*

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STAIRWAY
HOUSE OF MR. ANDREW V. STOUT, REDBANK, N. J.
JOHN RUSSELL POPE, *ARCHITECT*

XUM

DINING ROOM

LIBRARY

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DINING ROOM FIRE PLACE
HOUSE OF MR. ANDREW V. STOUT, REDBANK, N. J.
JOHN RUSSELL POPE, *ARCHITECT*

XUM

LIVING ROOM FIRE PLACE
HOUSE OF MR. ANDREW V. STOUT, REDBANK, N. J.
JOHN RUSSELL POPE, *ARCHITECT*

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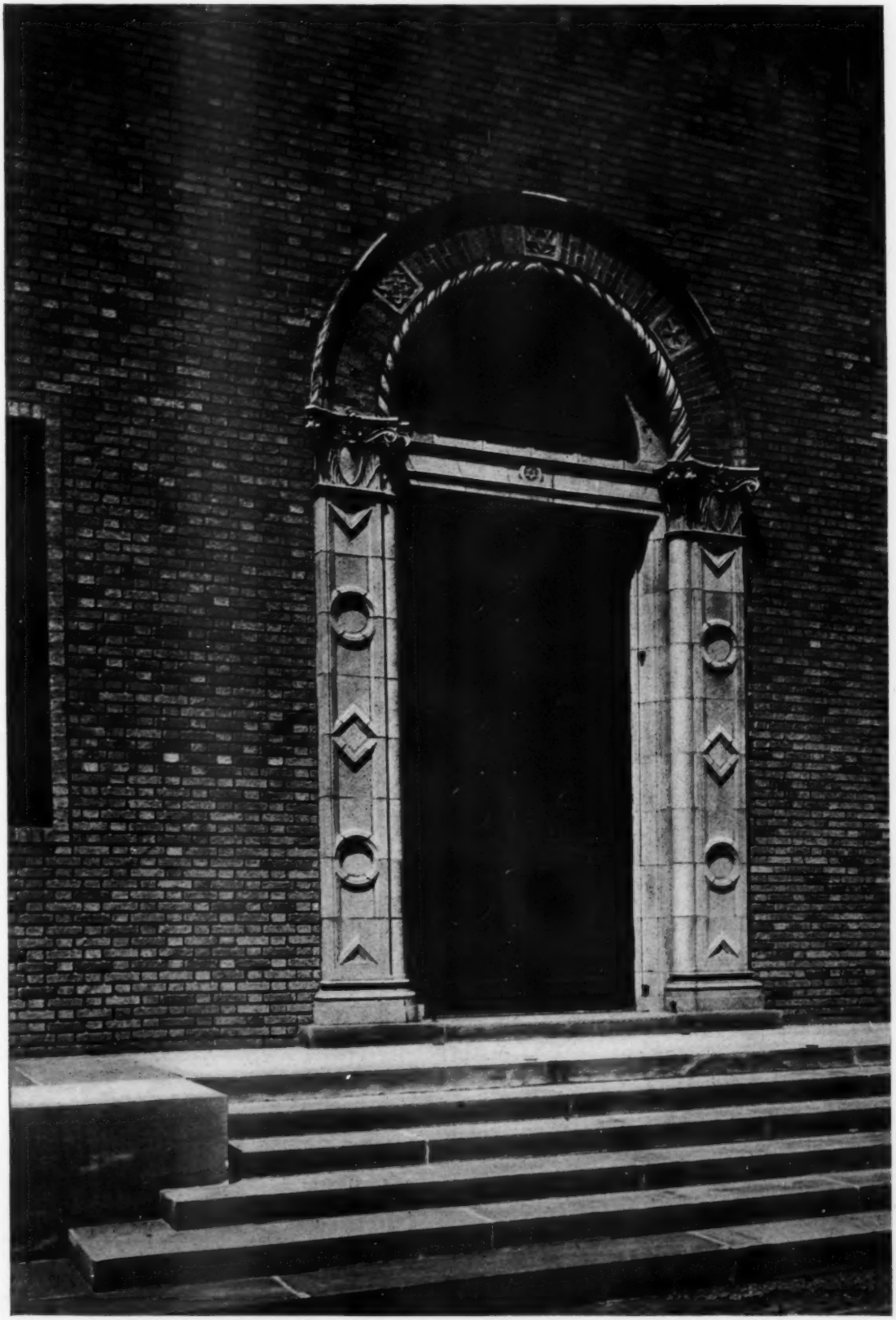
MENDLESON MEMORIAL CHAPEL, LOUDENVILLE, N. Y.
LEWIS COLT ALBRO, *ARCHITECT*



MENDLESON MEMORIAL CHAPEL, LOUDENVILLE, N. Y.
LEWIS COLT ALBRO, *ARCHITECT*

XUM

HOUSE OF MR. B. AUSTIN CHENEY, NEW HAVEN, CONN.
ROSSITER & MULLER, *ARCHITECTS*

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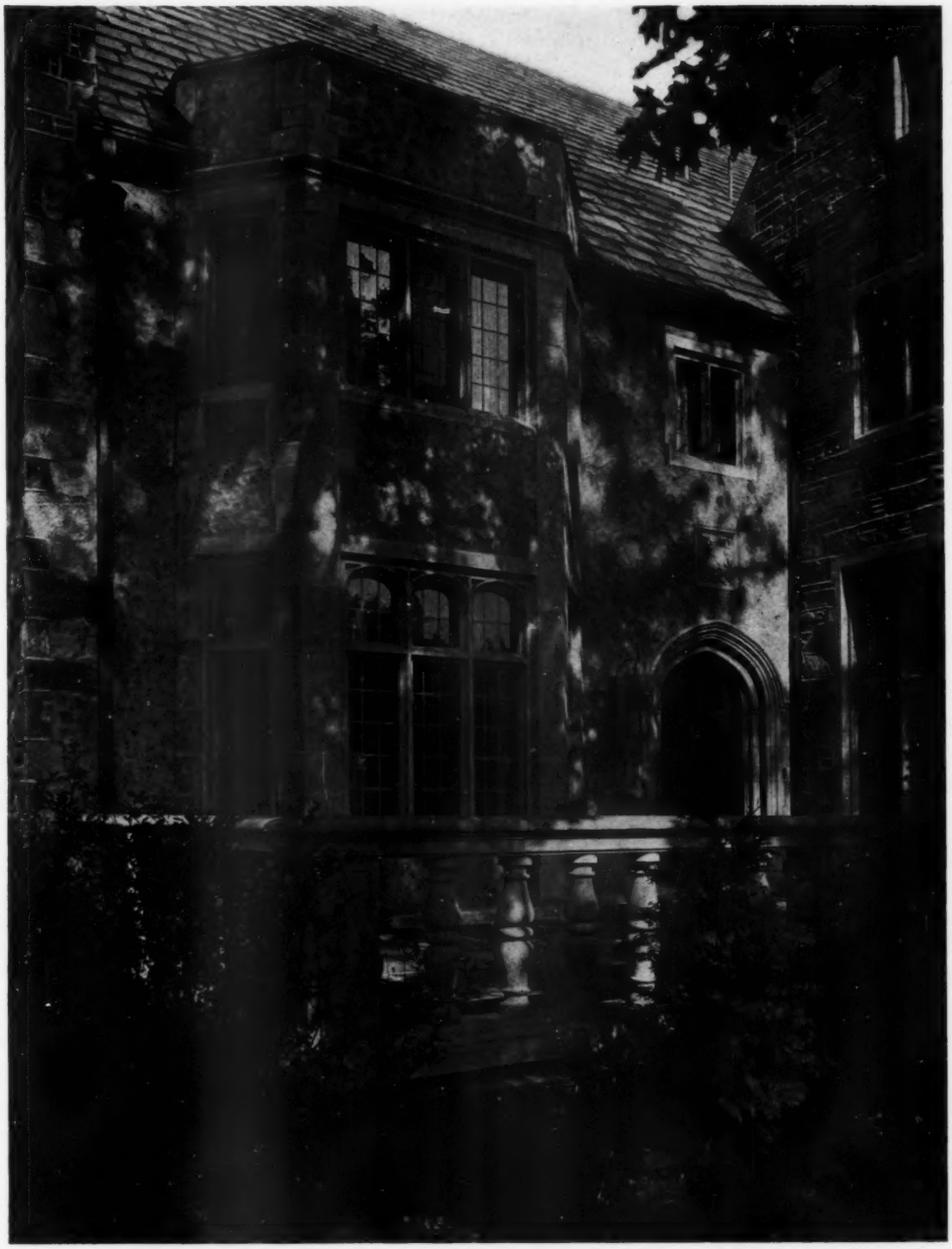
ROSSITER & MULLER, *ARCHITECTS*



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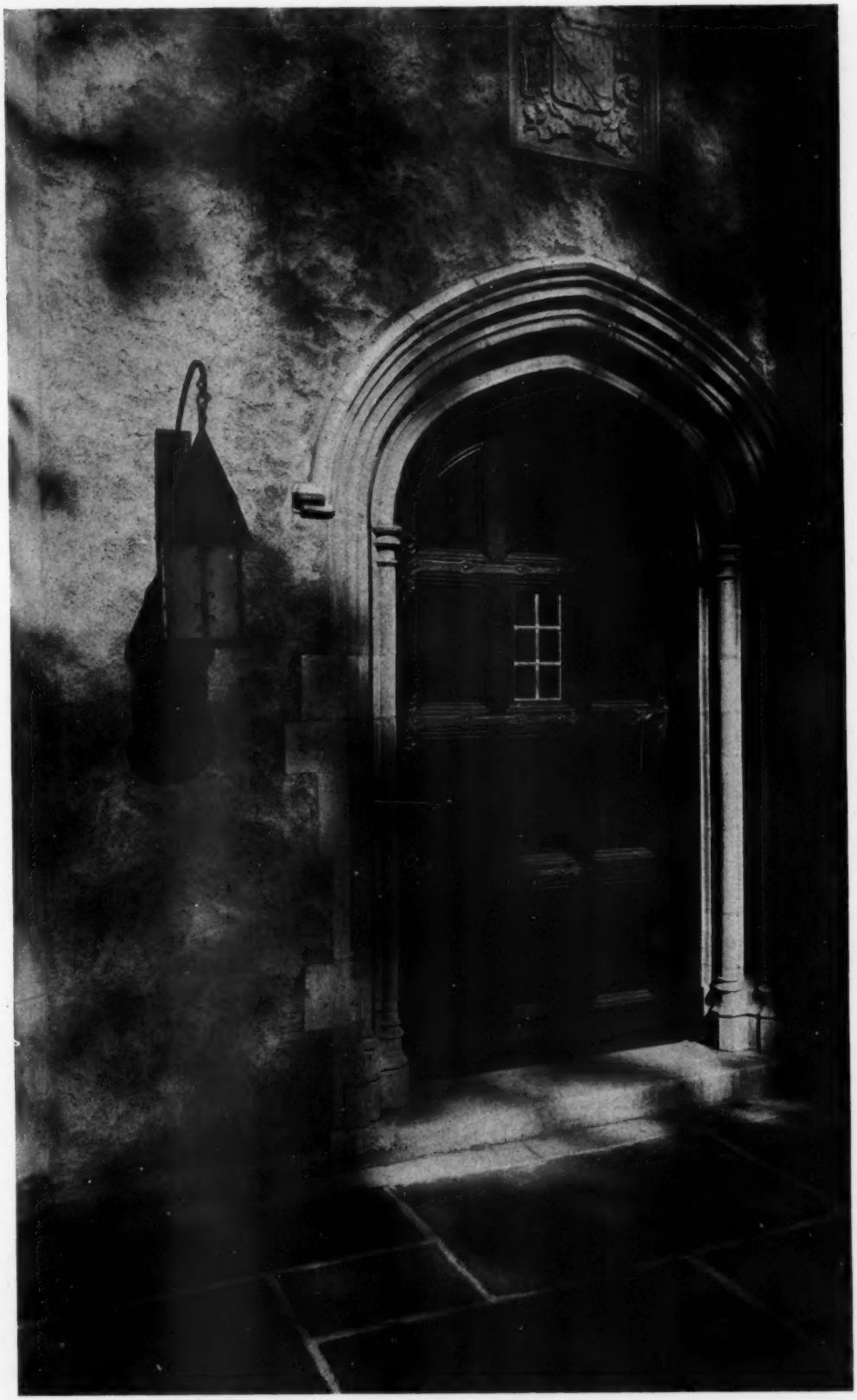

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ROSSITER & MULLER, *ARCHITECTS*

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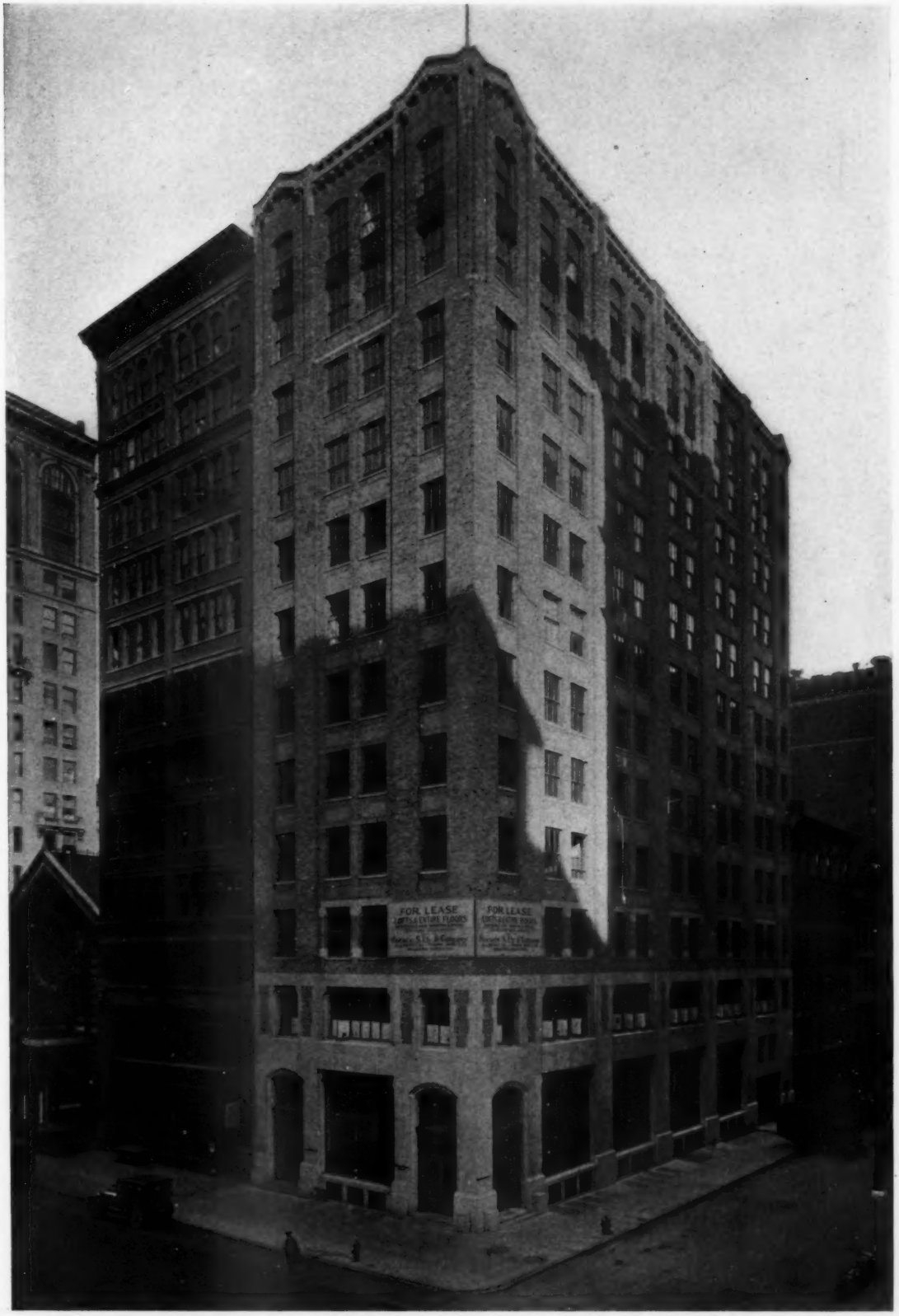


LOFT BUILDING, FOURTH AVENUE AND 19TH STREET, NEW YORK
ROBERT D. KOHN, *ARCHITECT*

REFRIGERATION
Part Two

By CHARLES L. HUBBARD

A COMPARISON OF DIFFERENT SYSTEMS

AS in other forms of mechanical equipment each system has its advantages and disadvantages, depending upon such conditions as cost of installation and operation, whether exhaust steam is available as a by-product, size and use of plant, temperature required, etc.

While both compression and absorption systems are used in nearly all classes of work, the former is more frequently employed for medium temperatures and the latter for extremely low temperatures. Both systems are used in cold storage warehouses, sometimes one to the exclusion of the other and sometimes in connection, the absorption machine being used for that part of the work requiring the lower temperature. In freezing fish both types are successfully employed. In abattoirs, general practice makes use of the compression machine, also in air and water cooling, and in the manufacture of beverages where moderate temperatures are required. For hotels and restaurants, stores, markets, etc., both types are extensively made use of.

The small portable machines designed for residences and light commercial work are practically all of the compression type. Based on steam consumption alone, the absorption machine appears to be more economical than the simple compression machine, but with the compound compressor the results are reversed. The particular field of the absorption machine is in plants where exhaust steam is available for use in the generator and where extremely low temperatures are required.

The combined compression and absorption system utilize three conditions which tend toward greater economy. First, the efficiency of the compression machine increases with increased suction pressure; that is, raising the suction pressure increases the tonnage or output of the machine at a faster rate than it does the horsepower required to operate the compressor. It is not possible, however, to take advantage of this beyond certain limits because a high suction pressure in a compression machine prevents low temperature in the refrigerator.

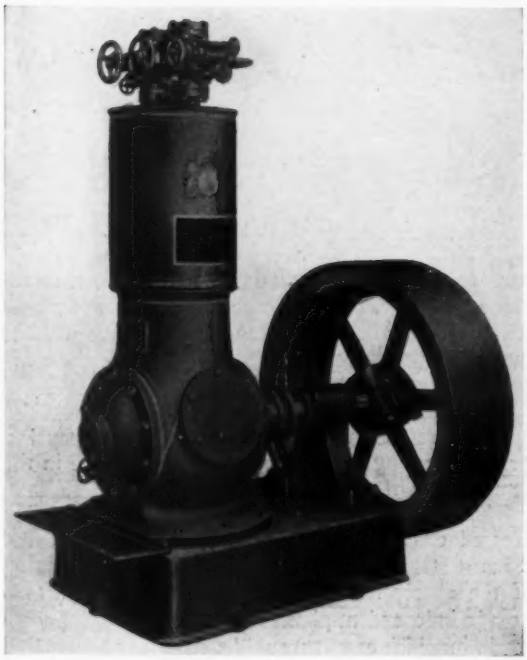


FIG. 11

Second, the efficiency of an absorption machine increases with decreased generator pressure, but this is limited in practical work because a low generator pressure calls for cooling water of unobtainably low temperature. Now, by combining the two systems, these conditions which make for efficiency, and which are not available separately, are easily realized, as will be seen by referring to Fig. 6. For example, suppose we have a compression machine and an absorption machine operating independently, each with a suction pressure of 15 pounds and a discharge or condenser pressure of 150 pounds. Now we may combine these as shown in Fig. 6, and lower the discharge pressure from the generator of the absorption

*Part one will be found in issue of April 27, 1921.

machine from 150 to 70 pounds, which, at the same time, increases the suction pressure of the compression machine from 15 to 70 pounds, thus obtaining the condition sought in the case of each unit, without changing the actual pressure range of the combined machine, which is 15 to 150 pounds, as before.

Computations show that raising the suction pressure from 15 to 70 pounds on a compression machine, having a condenser pressure of 150 pounds. will more than double the tonnage or output without increasing the horsepower required to drive the compressor.

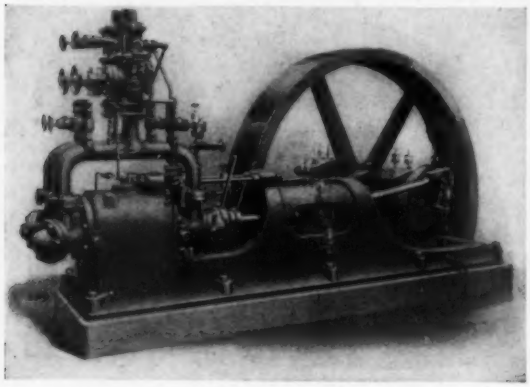


FIG. 12

With the combined machine this may be done without the sacrifice of low temperature in the expansion or refrigerating coils and without any change in the temperature of the cooling water.

The third condition mentioned, relating to increased efficiency, is the possible utilization of the exhaust steam from the compressor in the generator of the absorption machine. This is an important item in independent plants not associated with power work, in which case it would be necessary to use live steam in an absorption machine or throw away the exhaust from a steam-driven compressor. In the illustration given, we have shown how the output may be doubled without increasing the horsepower, which, of course, means that the same output may be realized with one-half the power. In case of a new combined installation this would call for a compressor only one-half the size of that necessary in an ordinary compression system of the same capacity. When both compression and absorption systems are used in the same plant, independently, they may be combined to the extent of utilizing the exhaust from the compressor engine in the generator of the absorption machine, by a simple change in the piping, thus operating the latter system on steam which might otherwise be wasted.

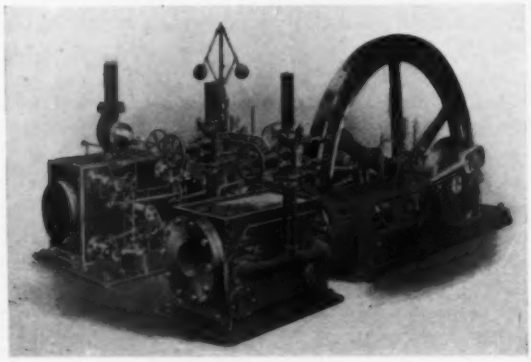


FIG. 13

Distributing System

This refers to the method of transmitting the refrigerating effect from the machine to the space or liquid to be cooled. In the *direct* system the expansion coils are placed where the cooling is desired, as in Figs. 1 and 4, and the latent heat of vaporization drawn directly from the surrounding air. This is the simplest arrangement and the one most widely used in systems of small and medium size. The two objections to this are as follows: First, in case of leaks in the expansion coils, the escaping ammonia gas passes directly into the storage rooms. Second, the extremely low temperature to which the coils are exposed, and the moisture in the surrounding air, cause frosting of the pipes, which not only reduces the transmission and thus lessens the cooling effect in the room, but also cuts down the vaporization of ammonia gas and may cause the excess of liquid ammonia to flood over into the compressor or absorber. However, with proper design and operation these difficulties may be practically overcome, and the absence of brine pumps, coolers, foundations, etc., makes this system cheaper to install and simpler to operate.

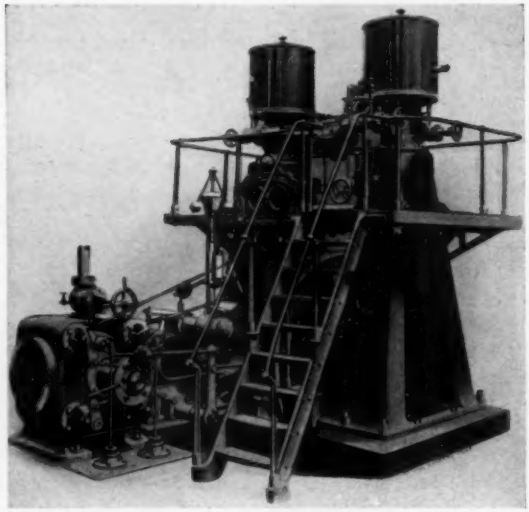


FIG. 14

In the brine system, shown in Fig. 3, the expansion coil is placed in a tank of brine and the latter pumped through the cooling pipes. This eliminates the possibility of gas escaping into the storage rooms and either reduces or does away entirely with frosting, according to the temperature of the brine circulated through the cooling pipes. Furthermore, there is a certain amount of "cold" stored in the brine which may be utilized for a short time by keeping it in circulation after the main machine has been shut down. This is sometimes a convenience in case of a breakdown and repairs to the refrigerating side of the plant, and is also made use of to some extent in the *congealing tank* systems to be mentioned later.

On the other hand, the brine tank and pump complicates the system to some extent and adds to the cost of operation through loss of heat from piping and apparatus outside of the cold rooms, and power required for running the circulating pumps. However, the objectionable features in both systems may be largely eliminated and the arrangement used which seems best adapted to the case in hand.

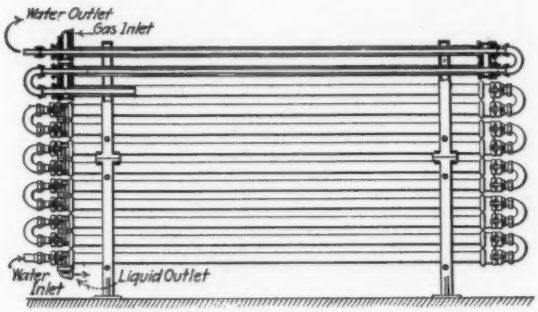


FIG. 15

Power for Operation

The unit of refrigeration is commonly taken as the cooling effect produced by the melting of 1 ton of ice per twenty-four hours, and is called 1 ton of refrigeration. This is equal to the cooling produced by the melting of $\frac{2{,}000}{24} = 83.3$ pounds of ice per hour.

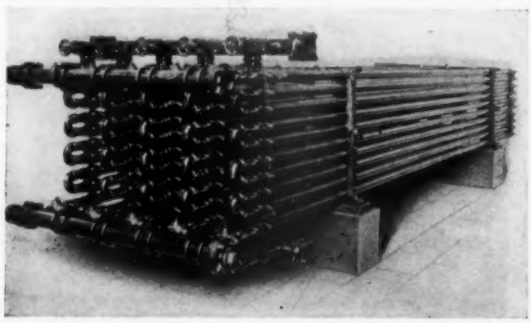


FIG. 16

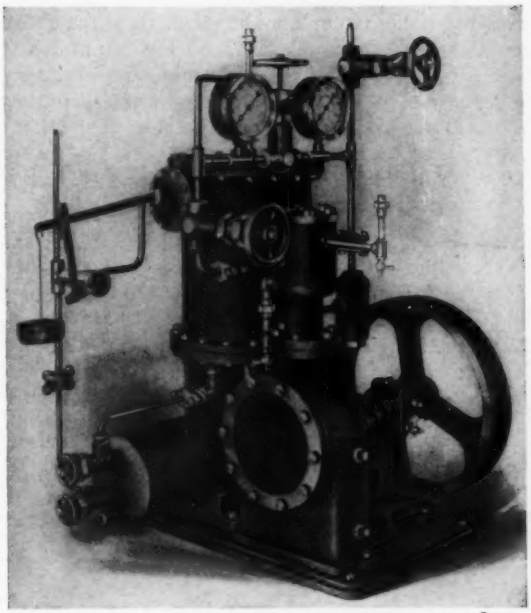


FIG. 17

To melt 1 pound of ice into water at the same temperature (32 deg. F.) requires 144 thermal units, which is called the latent heat of fusion, and strictly speaking, the unit of refrigeration is the amount of heat absorbed by the melting of 1 ton of ice or $2{,}000 \times 144 = 288{,}000$ T.U. The capacity of a machine expressed in tons per twenty-four hours is therefore the *rate* of refrigeration rather than the unit, as commonly expressed.

The brake horsepower per ton of refrigeration for compression machines will depend largely upon the size and type. The figures given by different engineers vary somewhat and it has seemed best to take the average of several. The quantities in Table I refer to tons of *refrigerating effect* per twenty-four hours and not to tons of *ice*.

Table I.

Rating of machine in tons of refrigeration per 24 hours:			Brake horsepower per ton of refrigeration for operating compressor:
1	to	5	2
5	to	10	1.8
10	to	20	1.7
20	to	30	1.6
30	to	40	1.5
40	to	50	1.4
50	to	100	1.3
100	to	150	1.2

When the machine is to be motor driven, the

capacity of the motor may be taken from the above table. If the compressor is of the steam-driven type, and it is desired to determine the necessary boiler power, we may allow the following quantities of steam per brake horsepower per hour for different types of engines, as given in Table II.

Table II.

Type of Engine	Pounds of steam per brake horsepower —per hour— Simple	Compound
High-speed, single-valve.....	34	28
High-speed, four-valve.....	31	26
Medium-speed, four valve.....	29	24
Slow-speed, four-valve.....	27	21

After computing the pounds of steam required per hour by the engine, divide the result by 30, to find the boiler horsepower.

Example: What boiler horsepower will be required to operate a compression system of refrigeration rated at 50 tons capacity, equipped with a simple, medium-speed, four-valve engine?

Solution: From Table I we find a 50-ton compressor requires 1.4 brake horsepower per ton, or a total of $50 \times 1.4 = 70$ horsepower, which for the type of engine assumed calls for $\frac{70 \times 29}{30} = 67$ boiler horsepower.

Types of Compressors

These are made in a variety of forms, depending upon the size and service required. A typical belt-driven compressor of small size is shown in Fig. 11, and illustrates the general form of machine used with the small portable and semi-portable outfits commonly installed in dwelling houses, grocery stores, markets, etc. A larger machine, of the horizontal type, is illustrated in Fig. 12. Both of these are belt-driven, an electric motor being generally used for the smaller sizes and either a motor or engine for the larger, as most convenient A horizontal compressor driven by a direct-connected four-valve engine is shown in Fig. 13 and illustrates a type of machine used in plants of medium to large size. A double vertical compressor, driven by a horizontal Corliss engine, is shown in Fig. 14 and represents an outfit of large size. Vertical compressors require less floor space than the horizontal type, but are not so accessible in case of repairs.

Condensers

Condensers for liquefying the gas after it leaves the compressor or generator are of three general types, known as the *submerged, atmospheric,* and *double-tube.* The principle of the first has already been shown in Figs. 1 and 4. It is the older form, and is not generally used to any extent in new work at the present time, except in certain makes of small portable machines. The atmospheric condenser consists of a series of return bend coils mounted upon the roof of a building. The outside of the pipes are kept constantly wet, and the evaporation thus produced absorbs the heat from the ammonia gas within and causes it to condense. Condensers of this form are used principally in plants of large size and where the cooling water contains impurities which will deposit a scale at temperatures below 100 deg. The double-tube condenser, shown in Fig. 15, is compact, efficient, and recommended where the cooling water does not contain scale-producing properties. This type is usually furnished with most small and medium size plants and is easily

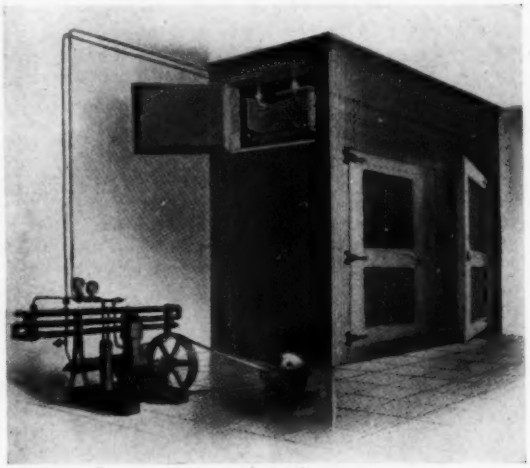


FIG. 18

mounted upon a building wall or on the side of a refrigerator or ice tank. In the construction of this device the cooling water flows through a pipe of smaller size carried inside the ammonia pipe, as indicated, the arrangement being such that the contents of the two pipes flow in opposite directions. As the temperature of the outer pipe containing the ammonia is usually equal to, or above, that of the room in which it is located, condensation of moisture from the air, and consequent dripping are avoided. A large condenser of this type, made up of several sections, is illustrated in Fig. 16.

Brine Coolers and Pumps

In the brine system special coolers are required for lowering the temperature of the brine before it is pumped through the coils in the refrigerators or storage rooms. These are made in two general forms, the most common being of the same general construction as the double-pipe condenser just described. The other form is a tank of large capacity with double cooling coils, and used in plants where low temperatures are required. The brine is usually circulated through the system by means of centrifugal pumps, although other types are frequently employed.

Room Temperatures for Storage Purposes

This depends largely upon the nature of the goods in storage and may be regulated by the quantity of liquid ammonia admitted to the expansion coils. For the freezing of meat and fish a temperature of 0 to + 10 deg. is required, depending upon the rapidity desired. For storage in a frozen condition, this may be raised to 10 or 20 deg. above zero. Temperatures for the storage of other articles are given in Table III.

Table III.

	Temperature—in deg. F.
Butter, held over long periods	0— 5
Butter, ordinary storage	15—20
Cheese	32—34
Eggs	32—34
Canned goods	35—40
Fruit	34—38
Vegetables	35—40
Tonic beverages	35—36
Flour and Meal	36—40
Maple Sugar and Syrup	40—45
Cigars and Tobacco	35—36
Furs and Woolens	35—36

Ice Making

Plants installed for storage purposes in hotels, restaurants, clubs, etc., are frequently equipped

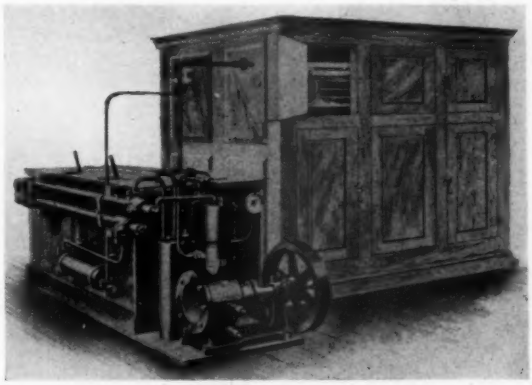


FIG. 19

for making ice also. In cases of this kind the so-called "can system" is employed, in which the water is frozen in galvanized iron cans placed in a tank of brine, which is maintained at a temperature well below the freezing point, by means of ammonia expansion coils carried along the sides. When ice is made in connection with general refrigeration or cold storage, it is only necessary to provide an independent branch line, with expansion valve, leading from the ammonia receiver to the coils in the freezing tank, thus operating the two systems at such different temperatures as may be required. The power required per ton of *ice* is considerably more than for a ton of *refrigeration,* owing to various wastes and heat losses brought about by the process, and it is customary to increase the power from 60 to 100 per cent. to cover these.

Refrigerating Outfits

A few typical outfits of the portable type, adapted to dwelling houses, stores, markets, etc., are illustrated in Figs. 17 to 19. The first of these represents a complete compression machine of one-half ton capacity, including compressor, ammonia receiver, and condenser, the latter being of the submerged type, located just back of the compressor cylinder. This machine is driven by a belted motor, and is ready for connecting with the refrigerating coils and cooling water. A similar machine, equipped with a double-pipe condenser, and connected up with a refrigerator, ready for use, is shown in Fig. 18. A combination outfit for both refrigeration and ice making is illustrated in Fig. 19. The machine is mounted upon the same base with the freezing tank, while the refrigerator is shown at the right. This is made in sizes rated from 300 to 1,000 pounds of ice per twenty-four hours, and has cold-storage rooms 6 ft. x 5 ft. 8 in. x 9 ft. and 10 ft. x 10 ft. x 10 ft. for the smallest and largest sizes respectively. These are typical of the many small outfits upon the market, and all capacities may be had up to those required for the largest hotels and department stores. As the size increases, the type of equipment takes on more the form of that employed in large commercial plants.

(To be continued)

Great Britain to Utilize Power from Tides

A SCHEME to generate 500,000 electrical horsepower daily by harnessing the power of the tides has been completed by the civil engineering department of the British ministry of transport, states *The Improvement Bulletin.* It is an application of the French discovery for utilizing the tides.

The scheme proposed the erection of a dam two and a half miles in length in the estuary of the river Severn, from which it is estimated that 500,000 electrical horsepower could be generated at a cost of about a half penny per British standard unit. It is claimed by the experts that there will be sufficient energy thus developed to supply power to the whole of Wales, a large part of England, and the southern section of Scotland, and to electrify a good many English railway systems.

It will be remembered that the French method, which is the one adopted for harnessing the Severn tides, is the storage of water at high tide levels and its use to drive turbines in passing from high level to low levels

XUM

SHORING and UNDERPINNING the CENTRAL WAREHOUSE, CHICAGO

THE Central Warehouse is located at the northwest corner of Rush Street and the Chicago River. The failure of foundations caused a settlement of between 6 and 7 inches in the central portion of the south wall, the face of which near the dock level was about 2½ inches out of line. The first row of interior columns settled between 3 and 4 inches. When this building was rebuilt after the Chicago fire, the dock line was moved south, and this wall and row of columns were placed in new, filled-in ground. The wall was supported on three rows of wooden piles, on which were placed 12 x 12 in. wooden caps and sills, and on these was built the stone foundation. The foundations for the columns were built in a similar manner. The building was repaired during the summer and fall of 1919. The illustration plainly shows at the spandrels, window sills and caps the distortion due to settlement.

The settlement was caused by the failure of the tops of the piles, wooden caps and sills, due to decay. This portion of the foundation was above the present water level of the Chicago River. The piles were sufficient in number and size safely to support the loads without settlement.

The plans for reconstruction called for the removal of the old foundations, the wooden caps and sills and the tops of the piles to a point one foot below the water level, the construction of new concrete foundations, the underpinning of the walls, the raising of the settled parts to their original positions and the installation of a series of tie rods connecting the new foundation of the wall with a deadman placed about 50 feet north of the wall.

The new wall foundation of concrete is 7 ft. wide at the bottom, 2 ft. 6 in. wide at the top and 4 ft. 7 in. high. The concrete extended about 4 in. below the top of the piles and was reinforced by transverse bars at the bottom. New foundations for the columns were constructed in a similar manner. The deadman consisted of two 15 in. 55 lb. I-beams be-

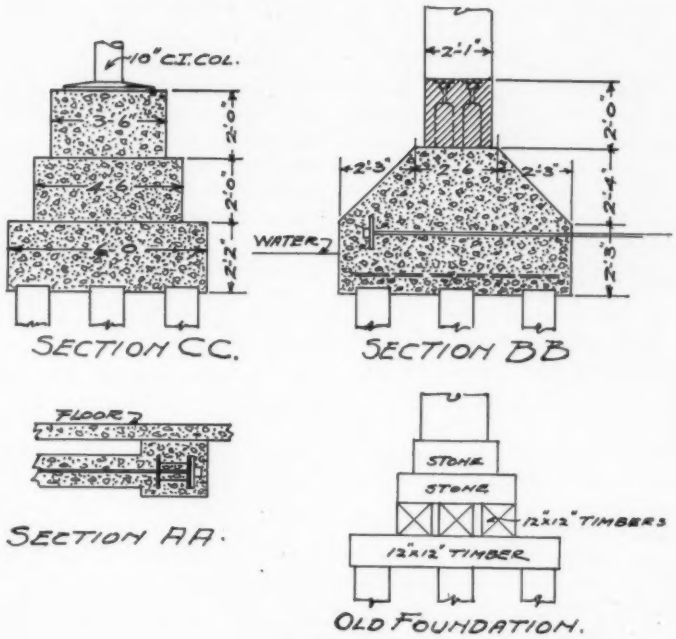
THE CENTRAL WAREHOUSE, CHICAGO
Showing the method of raising and supporting the wall during the reconstruction of the foundation

tween which passed 1½ in. steel rods which extended into the concrete foundation and with large plate washer on each end. The deadman and anchor rods were encased in concrete.

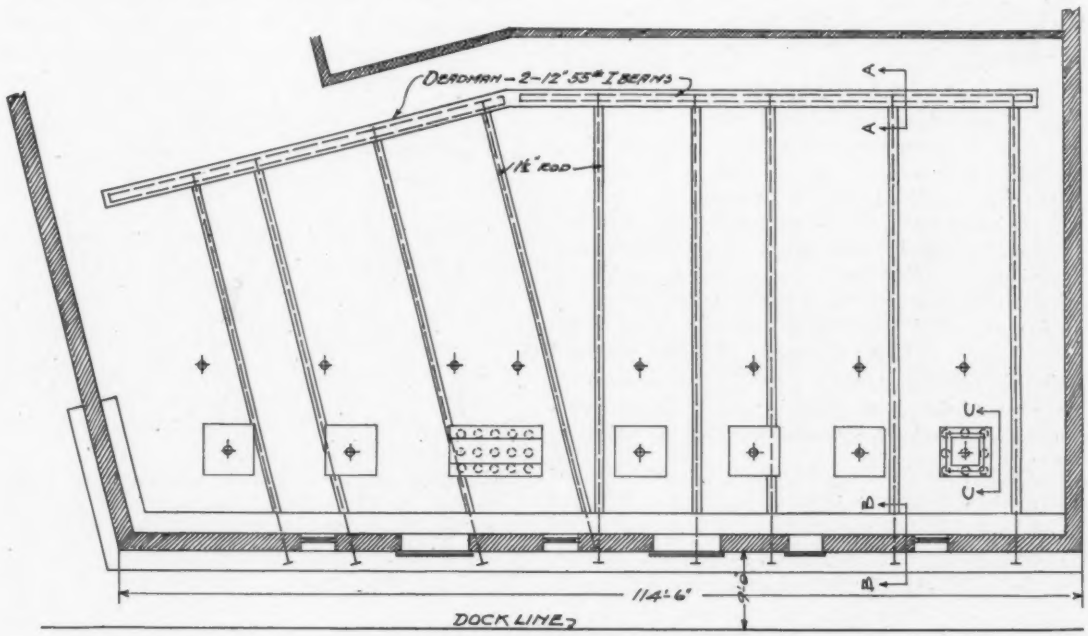
In reconstructing the foundations of the south wall, the first step was to remove the wall and foundations below the basement doors and windows. The piles at these places were cut to the new elevation of one foot below the water level. On these piles a cribbing was built upon which jackscrews were placed.

In these door and window openings were put short heavy timbers which rested on the jackscrews. On these timbers were placed two 20 in. I-beams on both sides of the wall. Needles consisting of two 8 in. I-beams were passed through holes in the wall and rested on the 20-in. I-beams. In the large doorways drums were put at each side of the arch. These drums transferred the load of the wall over the doors direct to the 20-in. I-beams, as shown in the illustration, and thus relieved the needles of that portion of the wall load. This reduced the crushing stress in the brick wall at the points of needle support.

By turning the jackscrews the wall was raised to its original level position and supported on the piles below the door and window openings. The balance of the foundations was then removed, the piles cut off and new concrete foundation put in place under the walls. In these foundations were embedded the ends of the anchor rods, the other ends of which were attached to the deadman.



SECTIONS



FOUNDATION PLAN

To the east and west of the central portion of the wall, the settlement was not so great. These portions of the wall and the return at the west end were supported on 8-in. I-beam needles which rested on sills, jackscrews and cribbing placed on both sides of the wall. The foundations were removed in short alternate sections about 6 ft. long, and the new foundations constructed. As soon as these sections of new foundation attained their strength, the wall load was transferred to them by two rows of direct drums as shown in Section BB. Then the alternate sections of the foundation were removed and rebuilt. Ultimately the entire wall was supported on the direct drums and so remained until there was no evidence of settlement in the new foundations. Then short, alternate sections of the wall were underpinned and the wall eventually rested directly on the new foundations. When the walk was raised, the cracks and displacements disappeared and it was in its original condition.

The settlement in the building was progressing in such a manner that its collapse could be foretold. To wreck and rebuild at that time would have been done at great expense and loss of revenue. By this method of reconstruction, the building was continuously occupied throughout the first to seventh floors inclusive. The only loss of revenue was that usually derived from the basement story. The work was done in record time as planned, and without hindrance or accident. Mr. Julius Floto, structural engineer, designed the anchorage and new foundations and the L. P. Friestedt Company executed the contract.

Note on Fire-Resisting Paints and Varnishes

By Henry A. Gardner†

AMMONIUM phosphate has been in common use as a component of fire retardant preparations for many years. When dissolved in water to make a solution of 10 per cent. to 12 per cent. strength and applied to cotton or like fabric, the cloth so treated is very resistant to fire. When ignited, the flame will go out almost immediately. The effect is probably due to the volatility of the salt, a fume being produced, which does not support combustion. Similarly, ammonium phosphate has been occasionally applied for many years as a constituent of fire retardant paints. For this purpose, the salt in finely divided condition is ground to paste form with linseed oil,* and the paste added to prepared paints in amounts usually from 10 per cent. to 20 per cent. of the pigment portion. In order to determine whether the fire retardant value of paints is really increased by the addition of such salts, the writer has just conducted some laboratory tests. Standardized Pamak Fire Retardant Paints were applied in two-coat work to white pine shingles. The same paints were then admixed with 10 per cent. of ammonium phosphate pigment-paste and applied to duplicate shingles. After drying for a week, the panels were submitted to a flame test. After being fully ignited, they were withdrawn from the flame. The flame on each set went out quite rapidly. While it was indicated that those paints containing ammonium phosphate showed slightly greater flame exit than the others, there was no very marked difference in the samples.

Since the standardized paints used in the above experiments are probably the most durable fire retardant paints produced so far, having shown but slight defects after weathering for four years, it would be inadvisable to recommend the addition of water soluble salts such as ammonium phosphate. This suggestion is made on account of the fact that such salts might during damp weather cause "washing" troubles.

For certain paints that are not subjected to exterior weather conditions, the use of ammonium phosphate might prove valuable. For instance, interior flat or gloss whites for slow-burning (wood) mill construction might be experimented with in this direction. There might also be a use for "phosphated" varnishes. As shown in Service Bulletin No. 3 of the National Varnish Manufacturers' Association, varnishes when applied to wood surfaces greatly reduce the fire hazard. This is due to the fact that the varnish film acts as a seal and prevents the combustible gases in the wood from escaping and becoming ignited. The writer has found that when ammonium phosphate is ground in varnish to the extent of 5 per cent., the color of the varnish is not materially altered, since the salt is very transparent in oil. Such varnishes become rather heavy in body and produce a somewhat rough appearing film. They might, however, find some special applications in the arts.

Another pigment that has given interesting results in fire resistant paints is zinc borate.* This product, when mixed with color pigments and ground in oil, produces a paint that has given excellent service on exterior exposure. The zinc borate pigment fuses to a somewhat glass-like film under the action of heat, and thus produces a seal that prevents the escape of combustible gases from the wood over which the paint is applied.

*It may also be applied in aqueous solution as a component of an emulsion liquid.

†Copyright, 1921, by H. A. Gardner.

*Experiments conducted by Forest Products Laboratory, Madison, Wis.

A Louis XV Paneled Room

(*Continued from page 586*)

work oftentimes but the slightest indication of the interior treatment of the rooms. These were completed by the "menusier" who was both carpenter and carver, either from the verbal instructions of the designer or following his own invention stimulated by the various engraved designs published for this purpose. This free method tended to develop the individuality and judgment of the worker and is responsible in a great measure for the piquancy and unique charm of the work.

From the standpoint of design alone a great deal can be learned from the study of such examples, where the essentials in the design are not obscured by elaborate detail. In this piece the delicate vigor of the work in the small panels, especially the pilaster strips, is worth careful examination. As in the best work of the period, harmony is obtained largely by the careful adjustment of curved lines of the same scale arranged in balanced series. Each design unit is thus composed of a number of opposed movements, no one overwhelming the other, but rather each converting its neighbor in turn, resulting in a whole static in effect but dynamic in quality. The subtlety and delicacy with which this idea is carried out forms the basis of excellence in all work of this period. The eye is led swiftly from point to point and never permitted to be bored, but on the other hand never permitted to be distressed by unmeaning violence.

Correspondence

The "Hawkeye State"

Editors: THE AMERICAN ARCHITECT:

I WAS interested and amused in perusing the article in your issue of the 13th inst. by Francis B. Ellis, on the "Hawkeye State." I, with a lot of other people from the Chicago Athletic Association, made the initial trip with this ship from Baltimore to Honolulu and returned to San Francisco and, having lived aboard for about forty days, became quite familiar with the physical conditions of the ship, and as I was delegated to write up the cruise for the "Cherry Circle," the Association's magazine, I have taken occasion to inform the public as to some of the real facts concerning the ship.

I have dealt with the subject more from an economic and practical viewpoint, but have really told only a small part of the story. The ventilating plant, for instance, is a complete failure. The day I visited the boiler room the temperature was 147 deg. and the men below decks had pulled off what might perhaps be termed a mutiny, breaking out all the portlights in order to get a little air. The ports, by the way, in the stateroom are 10½ in. in diameter and I understand they are to be increased to 18 in. There were no air chutes in the cabins and at Colon I succeeded in getting some galvanized iron, and then mustered some of the passengers as helpers and we made four of these. Afterward the ship carpenters made quite a lot with some iron they found on board and at San Francisco they had the entire ship equipped with them.

Chicago. EDWIN D. WEARY.

Editors' Note.—The foregoing is of interest as proving the contention of Mr. Ellis, that owing to the failure to consult with architects in the carrying forward of the various details of the Hawkeye State many unfortunate and easily preventable errors occurred.

Another Communication from An Old Subscriber

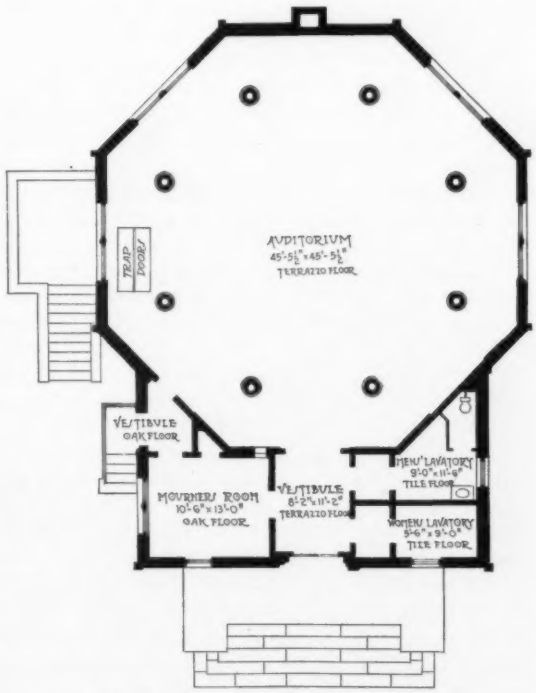
Editors: THE AMERICAN ARCHITECT:

I was greatly interested in the letter written to you by Mr. James M. Macqueen regarding the use THE AMERICAN ARCHITECT has been to him during the 35 years he has subscribed to it. I echo most heartily all he says but I can go further back than he can. I began my subscription January, 1879, so I have it in my files for 42 years. I have every plate of 1879-80-81 all bound just as they were issued. Since then I have of course learned to classify my plates so now I have a great collection.

I certainly would miss its regular arrival.

WILLIAM H. MERSEREAU.

Oakwood Heights, N. Y.



PLAN MENDLESON MEMORIAL CHAPEL
LEWIS COLT ALBRO, *ARCHITECT*
(For other illustrations see photo section)

Chicago's Field Museum

IT would cost $1,640,000 to rehabilitate the old Field Museum building in Jackson Park and convert it into a permanent memorial for the people of Chicago, according to estimates placed in the hands of the South Park board recently by the Illinois chapter, American Institute of Architects, and the Illinois Society of Architects. The report was compiled by the Municipal Art and Town Planning Committee of the former organization.

A number of uses to which the historic old building might be put are suggested in the report by George W. Maher, chairman of the committee.

"The building as it stands today," said Mr. Maher, "is worth at least $3,000,000. It would cost almost twice as much to construct it, at the current costs of labor and material. For slightly over a million and a half dollars, Chicago could have, in perpetuity, one of the most beautiful specimens of architecture in the world.

"It could be used as a great community recreational and art center, or as a branch of the Art Institute, which needs additional space. Here could be housed large architectural and sculptural models, such as the model of the Columbian exposition.

"There would be space for loan exhibits of Chicago artists, thus creating an opportunity for the sale of canvases and other works of art.

"The building would offer an appropriate place to start a school in industrial art, in which the association of commerce might be interested.

"Rehabilitated, the museum would become a great center for the liberal arts, a stimulus for creative art in all its branches, including music and the drama, and a factor in making Chicago the greatest art center in the world.

"It is universally agreed among architects, artists and critics that the building is unequaled as a pure example of classical architecture. It is the last remaining memorial of one of Chicago's greatest achievements, the Columbian exposition. Around it cluster memories dear to many thousands of people."

Growing Appreciation for Architecture

GEORGE HOWE, chairman of the joint exhibition board of the Real Estate and Building Exposition of Philadelphia, recently emphasized the growing appreciation of the true value and position of architecture as follows:

"The appreciation of the true value and position of architecture has made rapid strides in the immediate past, not only in the field of civic improvement, schools, hospitals, public buildings, but also among the more progressive industrial and commercial institutions.

"Philadephia has from the beginning held an honorable place in this movement among the progressive cities of our country. Not only has she provided many of our foremost architects (whom it would be invidious to name, lest one should be forgotten), but many of her ablest citizens have given unstintingly of their time and energy to civic improvement of every sort. The Parkway development alone, some drawings of which, in its completed state, may be seen on the walls of the architectural exhibition rooms, places Philadelphia among the leaders of progress in architecture.

"The Philadelphia Real Estate Board has, therefore, offered the architectural profession the opportunity of presenting before the large public which yearly attends the Real Estate and Building Exposition a group of architectural works of real educational value, comprising especially those elements in which our citizens are particularly interested: civic improvement and the modern dwelling."

Philadelphia's New Art Museum

PHILADELPHIA will soon erect an art museum in Fairmont Park. It will house not only the great accumulation of art treasures belonging to that City, but will also contain several bequests of great importance not yet on public view.

A correspondent to a Philadelphia daily paper makes the following good suggestions:

"We have heard a great deal about the new museum for Philadelphia's art treasures. The Park site is ideal. Let us hope it will rival New York's shrine and far surpass it in its construction. Is the public interested in the style of architecture for the erection of this building? There is a great deal of history centered around the settlement of William Penn, and the Colonial period is loved and reverenced by us all, although the condition of Independence Hall would not warrant a stranger forming that conclusion.

"Can we not have a reproduction that would stand for years to come on this Park site, that is altogether American? I am sure if such a structure were erected many bequests would be made for a final resting place for the old treasures of the Colonial period. If it is too late for the main building to be of this style, cannot an inclosure be made, reproducing, to commemorate that period, an historical building or interior?"

An Architect's Service Bureau

THE Indiana Limestone Quarrymen's Association has recently effected a reorganization, which will result among other improvements in a much better Architects' Service Bureau, and the publication of a really comprehensive series of service literature. This department will be conducted by Mr. H. S. Brightley, former secretary, who has become service engineer, and will devote his entire time to service research work of the organization. Mr. R. M. Richter, a former secretary of the Lime-

stone Association, but for the past two years an executive of one of the limestone quarry operating companies, has returned to the Limestone Association as secretary and executive head of that organization.

Annual Dinner of New York Society of Architects

THE annual meeting and dinner of the New York Society of Architects was held at the Hotel Astor on the evening of May 17. The following officers were elected for the coming year:

President, James Riely Gordon; Vice-President, Adam E. Fischer; Second Vice-President, Edward E. Loth; Secretary, Frederick C. Zobel; Treasurer, Harry Holder; Financial Secretary, Walter H. Volckening.

Addresses were made by Robert D. Kohn, A. I. A.; by Rudolph P. Miller, Superintendent of the Manhattan Bureau of Buildings; by W. E. Walsh, Chairman of the Board of Standards and Appeals, and Mr. Tinken, of the Real Estate Record and Guide, who were guests of the Society.

Year Book, New York Society of Architects

THE tenth annual issue of the Year Book, edited and published under the direction of the New York Society of Architects, has been received. As usual, this is a compendium of architectural practice in general, and the State of New York in particular, and will serve the same useful purpose as have its predecessors.

The valuable feature in the present issue is the publication of the revised New York Building Laws, which in itself will make the book one of great value for reference for men practicing in this State. Copies may be obtained, and the price ascertained, by addressing Frederick C. Zobel, secretary, 35 West Thirty-ninth Street, New York.

American Students to Help France Rebuild

STUDENTS of architecture of proven ability from American colleges are to be sent to France in groups during the yearly vacation periods to aid the French people in the work of reconstruction.

As a beginning, a newly formed organization known as the American Students' Reconstruction Association, will send to France this Summer fifty or more students, who will live with the French people and be trained under accomplished French architects. The idea grew out of the sending to France last Summer of the Harvard Reconstruction Unit of twenty-five students who worked in the devastated districts.

It is expected that colleges and universities will defray part of the expenses of the venture, but a fund of $250,000 is being raised.

Donn Barber of New York is President; Robert L. Buell, Harvard, '19, Secretary; Archibald Dudgeon, Treasurer; Ernest Angell, Vice-President; Otis P. Wood, Executive Secretary.

The organization announced that it has the endorsement of the architectural schools of Yale, Princeton, Cornell, Massachusetts Institute of Technology, Columbia and Pennsylvania.

Cannot Match Stone in Rheims Cathedral

A NEW problem has arisen in connection with the restoration of the Rheims Cathedral. The peculiar kind of stone used in the erection of certain portions of the building during the thirteenth century is showing signs of disintegration, probably due to the constant subjection to poison gas and shell fire during the war. It is feared that, for this reason, important sections of the walls may collapse.

It was generally believed that the whole cathedral had been built out of limestone taken from the Rheims Mountain, but it is now learned that the thirteenth century work was all done with a peculiar alluvial rock formation, brought from Fismes, which is known as "Roman block." When polished, this Roman block took on a rose gold surface in which small fossil formations could be detected.

Seven hundred winters, centuries of rain-storms, had left this stone practically undamaged, until the German war gas began its destructive work. Thus far, however, geologists have been unable to find more of this Roman block for the repairs which, if done with ordinary stone, would detract from the beauty of the structure.

To Enlarge University of Chicago

AN extensive and ambitious building program, involving the expenditure of $15,000,000, to which John D. Rockefeller has contributed $10,000,000, for the creation of a greater University of Chicago, is outlined by President Harry Pratt Judson in a booklet mailed to 10,000 graduates.

Perhaps the most imposing of the new units will be the $1,500,000 university chapel.

Funds for its erection already are available, the money having been segregated from the $10,000,000 gift of John D. Rockefeller. Tentative plans call for an edifice in Bedford stone and of Gothic architecture.

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FEDERAL VIEWS TOWARD BUILDING TRADES

An Address by Hon. Herbert Hoover, Secretary of the Department of Commerce, to the Fifty-Fourth Annual Convention of the American Institute of Architects

"BY and large," said Mr. Hoover, "the services that the government can properly perform in remedy of this situation must be entirely indirect, for the government cannot enter into the fixing of prices or the determination of wages."

Among the obstacles blocking better conditions in building, Mr. Hoover enumerated "conspiracies to maintain prices and corrupt bargains with labor," excess profits taxes, the highest ranges of the income tax, the division of investment capital from building purposes, intermittencies of employment and the lack of a standardization of materials.

"The difficulties in our national housing," Mr. Hoover said, "have been ventilated time and again by the various national associations, by congressional investigation, State investigations, by statements of our public men—leaders of the industry. The appalling anomaly of millions of idle men, co-existent with suffering, as never before from under-housing, is obvious to everybody.

"The obstacles that lie in the path of the quick resumption of home building on the large scale needed have been repeatedly enumerated. Each enumerator puts a different weight of importance on these different obstacles, among which are the inequality in levels of economic readjustment—that is, in the high prices of building materials, of transportation, and of labor—the reduced income in many occupations, the conspiracies in restraint of trade, the restrictions on effort through the rules of organized labor, the strikes, the Federal taxation, the wastes in the industries, etc.

"IMMEDIATELY upon the inauguration and with the full approval of the President, the Department of Commerce undertook to study and organize such effort as the Federal government could properly give to the building situation.

"While any attempt at readjustments of prices and wages is absolutely a local question that must develop within each community, certain broader aspects of fundamental improvement in conditions could be wisely undertaken through Federal assistance and co-operation with the professional and trade organizations. These aspects more especially lie in direction of the elimination of economic and physical waste in the industry.

"I have held extensive conferences with many elements of the building industry, such as various branches of national organizations and individuals concerned in material, real estate, finance and labor, with a view to securing their co-operation. I was greatly pleased when some weeks ago I received a communication from the American Institute of Architects confirming the undertaking of the Department of Commerce of the building problem.

"IN order to secure the best advice I appointed a committee, consisting of Ira Woolson, consulting engineer of the National Board of Fire Underwriters, who has made a practical study of the building codes for years; Rudolph P. Miller, engineer in charge of building ordinances of New York and president of the Association of Building Superintendents of the United States; J. A. Newlin, of the University of Wisconsin, in charge of the Forestry Products Laboratory and a recognized authority on timber; J. R. Worcester, consulting engineer of Boston, an expert on structural steel stresses and design; Prof. William K. Hatt, of Purdue University, who has had much experience with concrete structures; Ernest J. Russell, of St. Louis, an architect and a member of your institute, who has already contributed so much to the industry through his work with the Board of Jurisdictional Awards, and Edwin H. Brown, also a member of your institute, who has so greatly interested himself in the small home problem. By these arrangements your association, the engineering council, and other engineering bodies are represented.

"Reasoned opinions upon each question might be rendered by the various counselors that we set up. Again, these opinions or decisions might from time to time be promulgated as standards of practice endorsed by this department; eventually these opinions rendered may collectively form the basis of modern building codes and material standards and be guides for the reduction of waste and the improvement in building practice.

"I do not consider regulation by the government has any place in these matters. Voluntary action will be far more effective. In matters of readjustment of the economic levels, local community action will have a much larger value in securing a restoration of confidence in this industry, and aside from giving inspiration to such action, I do not consider the Federal government has any place.

"Such movements, through local conferences with the different branches of the construction industry—material, labor, contractors, together with bankers and other civic bodies representing the consumer—have already been started by the National Federation of Construction Industries. These efforts should be initiated and assisted in every town. They do not only raise moral standards but also secure helpful economic action by such community movements.

"Prompt and clear-sighted public service of this character may contribute materially to relieving the stagnation in the building trades and to the amelioration of suffering arising from the present condition. The recent declaration of the representatives of organized labor in these trades of a movement to establish joint adjustment boards in various communities is a step in the right direction.

"Your association could do much to bring all these elements together in constructive solution of many problems. I am, however, convinced that such efforts will be futile if attempted on other than a purely local basis. Attempts to settle wages or conditions of labor on a national basis tend in a direction disastrous alike to both labor and industry.

"THE conspiracies to maintain prices and corrupt bargains with labor can be eliminated by continuous vigorous action of the authorities. There will be no restoration of confidence in the industry until this is accomplished. A great majority of the manufacturing, distributing and assembling trades and workers are not in any manner participants in wrong-doing, and are indeed suffering from the actions of a small minority in the industry.

"There are some directions in which the Federal government can be of assistance in the problem. The

excess profits tax creates speculation and waste, blockades free dealing in property, and the higher ranges of the income tax drive capital out of building investment because of our national failure to secure income taxation of State, municipal, and national securities.

"There are certain diversions of investment capital from building loan and mortgage purposes, that I believe could be mitigated by amendment to the banking laws. The national banks should be given greater freedom to apply their savings accounts to mortgage purposes. The savings accounts of the country are its fixed capital, and should be applied to fixed investment, not to commercial purposes. There could also be a larger application of insurance money to mortgage purposes.

"The more particular direction in which it is the purpose of the Department of Commerce to exert itself in co-operation with the industry and its professional advisers is in the reduction of waste and the increase of stability in operations. It is only by steady and persistent drive to the increase of industrial efficiency in the national sense that we can hope for steady improvement in the comfort of our people.

"One phase that requires exhaustive study is the intermittent operation of the industry. In my view, it is the definite point where the greatest waste finds its roots and is the largest element of high costs affecting both labor and material. I believe that any study will show that the average employment of labor in these industries is not over 65 per cent. of their possible time. One of the reasons for the constant drive for higher hourly wages is to maintain an adequate annual income and to offset the loss due to intermittent occupation—and labor itself has contributed to intermittency by its rules.

"Our equipment capacity for production of building materials is probably 30 per cent. higher than is necessary for it, if we could secure nearly an average demand. For instance, our lumber mills have a capacity of above 50,000,000,000 to 60,000,000,000 board feet, yet the annual production is but from 32,000,000,000 to 40,000,000,000 board feet. The annual capacity of our cement mills is above 130,000,000 barrels, but the annual production runs from 70,000,000 to 100,000,000 barrels. The annual capacity of our brick plants is about 8,000,000,000 bricks; the annual production is from 3,500,000,000 to 7,000,000,000. There are periods when the production of many building materials is actually suspended, just as is labor suspended on construction work.

"If we examine the intermittencies we find that they fall into three general classes: First, seasonal and weather interruptions; second, strikes and jurisdictional quarrels; third, inability of transportation to meet the peak load.

"The seasonal and weather problems are no doubt to a great degree insurmountable, but there could be local community action in establishing a definite repair season out of conflict with the season of new buildings. The lost time from general strikes could be reduced by local adjustment boards and loyal adherence to their decisions. The jurisdictional strikes have no justification and I am informed that of the lost time due to all strikes in these trades over one-half arise from this quarter.

"THE committee on jurisdictional awards, in which your society participates, has performed good work. The abolition of such strifes lies entirely within the powers of organized labor. Settlement boards of their own, whose decisions would be binding, would be a contribution to labor's own income and employment. Labor could also greatly assist in lifting us from this blockade on building if it would set its face against any restraint on effort that still survives in some trades. There would be less dispute over wages and larger employment if the rules could be revised by the local adjustment boards and community conferences.

"I am informed that from 10 to 20 per cent. of the cost of building lies in the lack of standards in a broad sense. We have, for instance, 260-odd building codes to which a large portion of the building of the country must conform. They vary flagrantly in floor loads, wall thickness, stress requirements, character of material to be employed; they hold back progress in methods of construction; they make impossible the standardization and simplification of certain materials which could be effected without affecting the attractiveness of design, of style, the arrangement of the interiors, or the usefulness of the buildings.

"We need a standardization and a simplification in many of the materials required. The dimensions of articles of constant use could be greatly simplified as to many construction materials, plumbing, hardware, etc., with great savings both in manufacture, distribution, and installation, and there need be no sacrifice of styles.

"There is another phase of this problem in which I believe the government could be of proper assistance. That is through the regular collection and prompt distribution of the current data of production, stocks, the general price levels of essential building materials, and the volume of activity in the industry. Such information would make for stability and elimination of waste.

"Many of the building material trade associations have endeavored to secure such data for their members. Often enough they have limited the distribution of these data to those who co-operated in securing it. Right here lies one of the causes and inspirations of certain types of 'open price associations' which so quickly degenerate into combinations in restraint of trade. If such fundamental data could be collected and promulgated to the entire public, it would abolish a justifiable reason for maintaining these associations; it would protect the small operator as well as the larger one and, what is of a great deal more importance, it would contribute stability to the industry.

"IF we take the single case of the lumber industry: Here the miller must in many branches prepare his material from eight to twelve months in advance of its consumption; he must take the risk of fluctuating demands both in varieties and quantity. It is of primary importance—if this industry is to reach a condition of stability—that every miller in the United States should know the current stocks of the principal varieties of his competitors. It is of primary importance that the whole public should know these stocks and the actual selling price of these materials at the point of manufacture.

"If such information were spread generally, the public, by adding the freight rates and a reasonable handling charge, can quickly judge the righteousness of a quoted price and can attain some measure of protection as to price. The tendency of such information is to prevent overexpansion of the industry—a distinct contribution towards the elimination of intermittent operations.

"The Department of Commerce, under the census law, is called upon to provide such data from time to time. The intervals have been too far apart and publication so delayed as to give the data only a historical value. I have undertaken to organize this matter and am asking for co-operation of the industries in making the service more effective.

"The efforts of conventions and associations such

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as yours, the many local efforts at readjustment, such efforts as I have outlined, the activities which the Department of Commerce is undertaking to secure the co-operative effort of the entire industry in the solution of questions of building codes, standardization of materials and specifications and simplifications of articles, as well as in the recruiting and distribution of data with regard to production and activity are, in fact, the fundamentals upon which the correction of this situation must ultimately rest. There is no ready formula or panacea for our troubles. We have got to get to the bottom of this whole matter to develop the efficiency of the industry, secure the elimination of its wastes and, above all, we have got to work harder.

"This is not a program of government domination and interference in business. It is a program of service that can be rendered by co-operation with the industry. The end that we seek is the end of all government, and that is to improve the daily living of all our people. It is the desire of the Department to co-operate with you to solve these problems."

THE BUILDING SITUATION in the MIDDLE WEST

(Special Correspondence to THE AMERICAN ARCHITECT)

CHICAGO—Uncertainty continues to characterize the building situation in Chicago. The uncertainty, however, is of a more hopeful nature than that which has made the early spring season such a matter of guesswork with everybody connected with the building industry. The chief complication at present observable is the lack of certainty regarding the end of the building tie-up which is now in effect as a result of a divergence between associated contractors and union labor. The issue came to a sharp break on May 1 when the contractors decided to suspend operations on all buildings in their charge unless the union builders accepted a wage cut amounting to about 25 cents per hour. The unions flatly rejected the offer and the lockout ensued.

Since May 1 building has been at a virtual standstill, and until the opposing sides to the controversy adjust their differences there will be no building of importance here. Both sides are now hopeful that some ground of mutual concession will be found upon which a new agreement may be based, although their public utterances indicate both sides as being firm and inexorable. As this is written—around the middle of the month—rumors are in circulation to the effect that a truce will be patched up, but architects are rather fearful that any further delay will have the effect of nullifying many important building plans as far as 1921 is concerned.

While the task of the prophet is both uncertain and thankless, it may be said to appear to an interested observer that labor concessions will have to be made before building can proceed. The employers undoubtedly occupy the stronger strategic position, because the public demand for building has suddenly subsided and the shoe is on an entirely different foot than that which wore it during the high pressure days following the armistice. Apparently the public has lost its fervor for high priced buildings and lots of them. The average man who heretofore contemplated building is now willing to abide the process of events, convinced in his own mind that the man who waits will pay less for his construction than the man who builds now.

Contractors talk of an open shop movement, but unionism is so strongly intrenched in Chicago's industrial life that threats of the open shop are not likely to see fruition. A compromise on the wage scale is more likely to provide the key that will end the deadlock. Union builders in the skilled lines formerly received $1.20 per hour and the contractors want to reduce that sum to $1 an hour with a reduction of from $1 to 70 cents per hour for unskilled building labor. Increased individual efficiency of the building labor may be held to justify a slightly higher wage than the one now proposed by the contractors, and a settlement on the basis of $1.10 or $1.05 an hour is not unexpected.

The Chicago public has had its enthusiasm for building considerably dampened, however, by other things than the dispute between builders and contractors.

For one thing the anti-profiteering legislation aimed at Chicago apartment landlords is in danger of proving a considerable detriment as far as further building of apartments is concerned. Prospective builders foreseeing favoritism to tenants in such legislation are refraining from entering a field where obloquy and possible litigation await them. There has been a substantial decline of building permits as far as apartment structures are concerned since the so-called Kessinger bills in the Illinois legislature have been in pendency.

Another thing that is serving to discourage the building of apartments is a growing feeling that Chicago is not particularly short of residential structures after all. The realization is dawning slowly, but is dawning, nevertheless.

Following the war, and particularly during the flush post-armistice period, the highly paid working classes worked up a very acute class consciousness and found themselves aspiring to residence upon plutocratic thoroughfares. The result was that apartments of the better grades and in the better localities could not be erected rapidly enough to meet the demand. With the deflation period has come a consequent deflation of the workingman's purse and he has found it incumbent to return to his less expensive habitat. The logical outcome of this

deflation movement has been that the less favored apartments, vacant during the flush days, are now filling up again, while the rent sign is beginning to bloom in the high priced neighborhoods. Real estate agents say that there are many hundreds of high priced apartments now vacant, and a cursory survey of the residential districts gives corroboration to this view.

A deterrent of more pronounced character, however, is found in the revelations which have come as a result of the joint legislative probe into Chicago building conditions. The Dailey probe committee has been actively at work in Chicago for several weeks, and the papers have been fairly filled with sensational reports of graft and "shake-down" on important Chicago structures. The assertion has frequently been made during the probe that every important building constructed in the business district in the last five years has paid tribute to an unholy avarice on the part of labor leaders and union agents.

Judge Trude, formerly on a Superior Court bench in Chicago, but now engaged in law practice in Chicago, told the investigating committee that he knew of $45,000 paid to union agents by the builders of the State-Lake theatre and office building finished a year ago. The tribute was paid to avoid delay by means of the strike, and more than one set of officials are alleged to have shared in the profits of the "shake-down." Beginning with excavation and continuing through various phases of construction it was found necessary to oil the gears of the local union system, and that in a very substantial manner. The payments were made for "advertising," "fines" and other meaningless synonyms for plain and simple graft.

Indictments have resulted from these revelations and other indictments are said to be on the fire.

The investigation while revealing a sad state of affairs as far as the unions have been concerned has not been exclusively focused on the poor workingman. Building supply dealers and manufacturers of building supplies have also found themselves very conspicuously and unhappily in the limelight.

Illicit combinations between manufacturers and contractors and between contractors and unions have been prominently aired in the public prints with the very logical result that the Chicago mind is becoming imbued with the idea that anybody who builds now on an important scale must be prepared to pay tribute to everybody with whom he deals in the construction of the building. Perhaps this statement should be revised, for there has been no intimation of culpability as far as the architects of the city have been concerned.

It can be seen that reasons are multiplying against building, while the favoring circumstances have not increased accordingly. Architects hold the opinion that unless speed is manifested, the big building program which Chicago has been boasting about in prospect will not get under way this year.

The effect of the building tie-up and other adverse conditions on the lumber and supplies' trade has been unfavorable, but these lines were spared the shock of depression mainly because they were sufficiently depressed prior to recent setbacks. There was very little call for building materials under the apathetic condition of building, and now that the building has been reduced to the irreducible minimum, lumber and other materials are hardly any worse off than before.

Prices of lumber and materials have remained practically unchanged mainly because nobody cared to ask what the prices are. When building is resumed, renewed demand will force a readjustment of prices, but until that takes place prices being quoted are merely nominal and mean nothing as to the real value of the merchandise.

BUILDING CONDITIONS on the PACIFIC COAST

(Special Correspondence to THE AMERICAN ARCHITECT)

SEATTLE.—It is possible now from the basis of price recessions, decline in labor overhead, greater satisfaction as to the base on steel and lumber and inclination of investors, to report a substantial improvement in the summer outlook for construction on the Pacific Coast. While lumber has remained steady it is apparent to architects, contractors and investors that no farther recessions in lumber should be contemplated in making up the building budget for the year or in estimating costs.

There has been a more noticeable movement in May in sheets, nails and pipe, both for the city and country work, than for any previous month of the year. Probably the outstanding feature of the Northern portion of the Pacific Coast markets is the decline in cement, which was not made by the manfacturers but in gross margin by the dealers of 25 cents per barrel. This move was made possible by dealers who report that their labor costs have declined, and that it would not be just to employes to be asked to stand a cut in common labor from the peak of $5.25 to $3.60 per day, the present scale by jobbers of building materials and hold profit steady. Lime has declined 50 cents per barrel at the plants and plaster wall board has fallen to 35c. per square yard. Common brick is steady, but Idaho fire brick manufacturers have queried coast jobbers on the question as to how much they should reduce prices to conform to the needs of the hour. Metal lath is down to 37 cents.

Wholesalers and jobbers in construction materials outside of lumber point out that there is no reason for withholding farther any building commitments that might be under contemplation, or for a jobber who has reduced his stocks to keep off the market.

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The fear of advancing costs prevails no longer. All large operators are easy in their mind as to futures. Investors are giving forth a much more cheerful note, inspired in large measure by the distant but ever-near German settlement with the Allies. It has been the feeling all along in lumber circles of the West Coast that a settlement of this question would restore fiscal confidence, ease loans, reduce interest rates and loosen money, and many symptoms of the fundamental soundness of this position are coming forth.

Cement seems to be undisturbed. Although there have been two spring reductions, both have come from exterior sources in which the manufacturers took no part, first in the decline in bags and second through reduced gross margins by dealers.

The fir lumber market has held stationary in the face of a light spring railroad volume. The movement to the Atlantic seaboard of fir lumber has been very heavy and is increasing as the intercoastal water rates soften. More was moved on the $20 rate to New York than on the $22.50 rate and there has been an increase in the volume since rates declined to $18 and in a much heavier proportion.

The feeling in fir lumber circles is that the season is now too far advanced for heavy spring movement, but with easier money conditions a strong August enquiry and sale is confidently looked for. This is based on reports from eastern buyers, where yard building stocks have been reduced to the minimum of the past three years. The car supply is now so ample that fir lumber could be loaded in the West Coast territory in August and delivered in the eastern building territory in time for structural enclosure before cold weather.

There are heavy accumulations of common dimension and large timbers due to the lack of railroad buying, and this fact is keeping the market from a reaction. Finishing sizes are sufficiently scarce to require much shopping by wholesalers among the mills in making up carloads for eastern buyers.

THE WHITE HOUSE, WASHINGTON, D. C.

DETAIL OF A SPANISH CHURCH, CIRCA XV-XVI CENTURY